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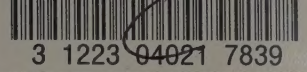
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ANTHROPOLOGY MEMOIRS

VOLUME I

FIELD MUSEUM—OXFORD UNIVERSITY JOINT EXPEDITION

80 Plates, 1 Map



CHICAGO

1925-31

CONTENTS

I. Report on the Excavations of the "A" Cemetery at Kish, Mesopotamia. Part I. By Ernest Mackay	1
II. A Sumerian Palace and the "A" Cemetery at Kish, Mesopotamia. Part II. By Ernest Mackay	65
III. Report on Excavations at Jemdet Nasr, Iraq. By Ernest Mackay . .	217
Index	295

FIELD MUSEUM OF NATURAL HISTORY

ANTHROPOLOGY, MEMOIRS

VOLUME I, No. 1

REPORT ON THE EXCAVATION OF THE "A"
CEMETERY AT KISH, MESOPOTAMIA
PART I

BY
ERNEST MACKAY
WITH PREFACE BY STEPHEN LANGDON

20 Plates

FIELD MUSEUM-OXFORD UNIVERSITY JOINT EXPEDITION

BERTHOLD LAUFER
CURATOR OF ANTHROPOLOGY
EDITOR



CHICAGO
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CONTENTS

	Page
List of Plates	5
Preface by Stephen Langdon	7
I. The "A" Cemetery at Ingharra, Kish	9
Dimensions and Shape of Graves	11
Position of the Body	12
Proportion of Sexes	13
Preservation of Bones	14
Pigment Shells	14
Rubbing Stones	15
Amulets	15
Glaze	16
Metals	16
Minerals	18
Stone Vessels	19
Unusual Objects	19
Tabulation of Objects Found in Graves	opp. 20
II. Pottery	21
Handled Pottery Type A	21
Pottery Braziers Type B	24
Straight-shouldered Ware Type C	28
Spouted Vessels Type D	29
Cup-based Pottery Type E	30
Bowls Type F	32
Pans Type G	32
Beakers Type H	32
Jars with Holes for Suspension Type J	32
Flat-based Pottery Type K	33
Round and Pointed Base Pottery Type L	34
Cups with Holed Bases Type M	35
Narrow-mouthed Ware Type N	35
Simple Dishes Type O	36
Tabulation of Pottery Types	opp. 37
III. Tools and Weapons	38
Battle-axes	38
Daggers and Knives	40
Razors (?) and Adzes	41
Chisels	42
Saw or Sickle Blade	42
IV. Household and Toilet Articles	43
Spindles	43
Toilet-cases	44
Hair Ornaments	44
Pins with Coiled Heads	45
Animal-headed Pins	46
Simple Hair-pins	46
Needles and Bodkins	48
Metal Bowls and Dishes	48
V. Personal Ornaments	51
Jewellery	51
Fillets	52
Ear-rings	52
Bracelets	53
Finger-rings	53
Beads	53
VI. Cylinder Seals	58

LIST OF PLATES

- I. View of "A" Cemetery from Ziggurat at Ingharra and Pottery.
- II. Jar Handles and Copper Implements.
- III. Copper Implements, Inlay, and Pigment Shells.
- IV. Toilet Articles and Jewellery.
- V. Burials.
- VI. Cylinder Seals.
- VII. Beads and Sketch Plan of Kish.
- VIII. Burial Groups.
- IX. Handled Pottery.
- X. Pottery Type A.
- XI-XII. Pottery Type B.
- XIII. Pottery Type C.
- XIV. Pottery Types D, E, and F.
- XV. Pottery Types G, H, J, and K.
- XVI. Pottery Types L, M, N, and O.
- XVII-XVIII. Copper Implements.
- XIX. Copper Hair-pins.
- XX. Copper Bowls.

PREFACE

The technical description of the pottery, metal and stone implements and other details of the more material side of the archæological discoveries, found at Kish by the Field Museum-Oxford University joint expedition, has been assigned to the competent hands of Mr. Ernest Mackay, our excavator. Architectural plans of all buildings and technical discussion thereof are also entrusted to the excavator, who will furnish a volume on this subject as soon as the more important buildings are completed. It is proposed that Field Museum will undertake to publish all volumes on this aspect of the expedition. The decipherment of inscriptions and inscribed tablets and their publication will be undertaken by the Department of Assyriology in the University of Oxford. A volume on the history of the famous city of Kish written by myself has already appeared, under the title "Excavations at Kish in 1922-24" (Paris, Paul Geuthner, 1925). To this volume the reader is referred for the historical, religious, and cultural importance of the discoveries up to April, 1924. The cuneiform texts will be published in future volumes of the "Oxford Editions of Cuneiform Texts."

In the present volume, Mr. Mackay deals almost exclusively with the pottery and implements found at the Sumerian palace. The very extensive collection of pottery found in the tablet hill, chiefly by me, and still more numerous groups of the same kind found this season, will be published and described in a succeeding volume. This pottery is all from the late period, seventh to fourth centuries B.C. A general description of most of the objects found in connection with the rooms stored with inscribed tablets will be found in the volume referred to above.

When the complete description of the archæological discoveries and architectural plans of the great Sumerian palace at Mound "A" shall have been made public, the importance of this part of our excavations will be found to be unique and unexpectedly great. This building furnishes a perfect example of early Sumerian architectural design upon a grand scale. We have unquestionably found the palace from which the oldest and the mightiest dynasties of Sumer ruled within the changing limits of their ancient kingdoms, from the most remote period of human history to the founding of the empire of Agade in the twenty-eighth century B.C. The great outer court of this palace, with its wide sweep of alcoved walls, fine flight of stairs and imposing row of pillars, was exposed at the end of last season. This year a great hall of pillars has been excavated north of the court, and a very rich collection of copper, silver and gold objects has been recovered. The remarkable inlaid frescoes of the palace found last season are described in my volume. We have, however, at present to deplore the failure to find royal inscriptions of the long line of kings who lived here. At the present writing, we have no historical inscriptions of a Mesilim or a Kug-Bau to chronicle, but they are certainly to be

expected somewhere in the recesses of this vast building. The material in this volume is confined entirely to the pre-Sargonic period, and in itself illustrates some of the most important aspects of early Sumerian and Semitic civilizations. The task of dealing technically with each group of objects and each period is one which imposes upon the direction of the expedition more lingering over details and tardiness in publication than the public will be disposed to condone. The field catalogue, carefully prepared for every object at the end of each day's work, now contains more than 4000 cards, which cannot be placed at the disposal of scholars until each mound is completed. From many considerations, a more satisfactory series of volumes could be published by withholding our results for many years, but such procedure, although adopted by some expeditions, cannot encourage excavations nor stimulate the interests of scholarship. I know the gratitude with which the scholars and the public of Europe and America at large have read of the remarkable discoveries at Kish. For these discoveries we are chiefly indebted to the loyal generosity of Field Museum of Chicago and to Mr. Herbert Weld, of Queen's College, Oxford. Many volumes will be required to publish our results, the two volumes published this year by Mr. Mackay and myself will, we trust, fully testify to the importance of the excavations. In 1923-24, the staff consisted of Mr. Mackay, Col. W. H. Lane, and myself. For the present season, Father Eric Burrows of Oxford has gone out as Assyriologist in place of the director of the expedition, and Mr. Talbot Rice of Christ Church, Oxford, has joined the staff. Mrs. Mackay, a trained anthropologist, has been with her husband since October, 1923, and has contributed all of the line-drawings in this volume.

STEPHEN LANGDON,

Professor of Assyriology.

Jesus College, Oxford, February 22, 1925.

REPORT ON THE EXCAVATION OF THE "A" CEMETERY AT KISH, MESOPOTAMIA

PART I

I. THE "A" CEMETERY AT INGHARRA, KISH

The cemetery lettered "A" is situated south of and close to the very prominent series of mounds known to the local Arabs as Ingharra (Plate VII). In shape it is a low and irregular mound, the highest portion of which is not unlike the letter S. The top of the mound, a large area of which is nearly flat, is four metres above the plain beneath it and 4.60 metres above the level of the cultivation which comes fairly close to its eastern and southern sides.

From a distance the mound looks somewhat insignificant. It is only when it is approached from the north or east, where its sides rise somewhat abruptly, that its importance is realized (Plate I, Fig. 1). Col. Lane, when prospecting around this part of Kish, was struck with the great quantity of broken potsherds lying on the mound as compared with the small number on the surrounding plain. He accordingly began a preliminary investigation there with two gangs early in January, 1924, and on the second day uncovered a burial which contained pottery of a type not found before in Mesopotamia.

With results so promising, work was continued on this site with a larger number of men until the middle of March, 1924. Thirty-eight graves were excavated, together with the remains of two important buildings dating from a very early period and lying beneath the burials.

The history of the site, which awaits further excavation, appears to be as follows:—

First, we have the remains of a large building of crude mud bricks of the small "cushion" type, averaging $23 \times 15 \times 3.5$ to 5 cm in size, provided with a fine stairway entrance and strongly fortified. This building was enlarged at a later period by erecting an annex alongside and to the south of it. On the eastern side of this annex was a portico with four large round columns also made of mud brick. The bricks used in the construction of this second building average $20.5 \times 13 \times 3.5$ to 5.5 cm. It is hoped that it will ultimately be possible to determine what interval of time passed between the construction of the first building and the erection of the second annex.¹

As is always the case with mud buildings, the second also soon fell into decay. It was repaired by the same or another people with both baked and unbaked bricks, averaging $24.5 \times 17 \times 4$ to 5 cm in size and of a flat biscuit-like shape, sometimes impressed with one or two thumb-marks, and sometimes with none. That a considerable interval of time elapsed between the erection

¹ These two buildings will be described more fully in a later publication.

of the second building and its restoration is proved by a flight of steps, which originally lead up to it, being covered over, and a long ramp substituted owing to the changed level of the ground.

Once more the site became derelict and was used as a rubbish heap, a cemetery, and a play-ground for children. Evidence of the latter is afforded by a number of broken clay toys being found scattered about. Later, this ground was used for some unimportant buildings just prior to the period of Hammurabi (2067-24 B.C.). Then it was again abandoned until the Græco-Parthian period, to which a tomb containing multiple burials belonged.

In our present state of knowledge, the small "cushion" type of plano-convex brick is said to date from an indefinite period before 3100 B.C., meaning that though this style of brick ceased to be used at about the latter date, we know nothing of the period at which it was first used in Mesopotamia. The "biscuit" type of brick, so called from its much flatter shape, is thought to date from 3100 B.C. to about 2900 B.C. It is to this period that we have to assign the burials found in the "A" mound.

Two graves (Nos. 13 and 15) were found upon platforms of the biscuit type of brick, which averaged $23 \times 14.5 \times 3$ to 4.5 cm and $24 \times 16 \times 4$ to 5 cm in size, respectively. These burials, therefore, belong either to the same period as the brick platforms, or to a somewhat later time. The graves cannot date from so early as 3500 B.C., because they were made when the building on which they rested was in an advanced state of decay. Nor can their date very well be later than 2900 B.C., because one of the bodies was lying on a specially constructed, burnt-brick platform whose sides were coated with bitumen. The archaic character of some of the objects found in this cemetery, especially of the weapons, would also militate against their belonging to a late period. Col. Lane and I would, therefore, date the burials about to be described at about 3000 B.C., a date which allows time for the decay of the "cushion" and "biscuit" type of plano-convex brick buildings which lie beneath them.¹

As stated above, thirty-eight graves were excavated in the "A" cemetery, and it is probable that during next season's work many more will come to light. In view, however, of the importance of the burials cleared this year, containing, as they do, entirely new types of pottery and other articles, it has been thought advisable to publish an account of them as soon as possible, so that the material may be available to those who want it. At the time of writing, except for the discoveries at Fara in Lower Mesopotamia, which was partially cleared by the Germans in 1902, and the excavations by the British Museum and Philadelphia at Tell'Obeid in the season 1923-24, we know practically nothing of the burial customs and of the objects placed with the dead in the early periods of Mesopotamian history.

¹ Allowance has to be made for the destruction of buildings by enemy action. Large and important buildings such as those in the "A" mound would probably be badly wrecked in a raid; and there were many raids against Kish.

DIMENSIONS AND SHAPE OF GRAVES

All the graves were simple holes of just sufficient size to take the body and funeral furniture. Owing to the very compact nature of the soil, due to damp and salt, it was found impossible to distinguish between the filling of a grave and its surrounding walls. For this reason, the exact dimensions of the graves could not be ascertained, except in four cases to be described below.

Grave 5 was cut down through a plano-convex pavement of the biscuit type of brick, and its dimensions were as follows: 160-180 cm long, 110 cm wide and 65 cm deep (Plate V).

In grave 10, which contained the skeleton of a small child, a rough paving, one brick thick, had been made of plano-convex bricks of both cushion and biscuit type.¹ To further protect the remains, this grave was also roughly lined with bricks laid on their edges.

An even more elaborate flooring was constructed for grave 13. It was made of biscuit bricks, averaging 23 x 14.5 x 3 to 4.5 cm in size. It measured 1.50 metres in length by one metre in width, and was one brick thick. Whole bricks were used for the outer portion and broken ones in the middle, the whole being bound together by mud mortar.

In another grave (No. 15), there was a similar floor, 2 metres long by 1.17 metres wide and one brick thick, but it was much better finished off with a coating of bitumen 1 cm thick. The biscuit bricks employed were of two sizes, measuring 22 x 14.5 x 4 to 5 cm and 24 x 16 x 4 to 5 cm, respectively. There is no doubt that the floors of graves 10, 13, and 15 were especially constructed and that they were not remains of early buildings.

Grave 23 was found on the top of a burnt-brick wall made of the biscuit type of plano-convex brick. But the people who dug the grave must have come upon this wall by accident and utilized it as a floor.

These paved graves in conjunction with burial 5 justify us in concluding that all the graves in the "A" cemetery were simple rectangular holes. No sort of coffin was provided for the additional protection of the body, except the rush or reed covering found in burials 21 and 27.

It would seem that graves were dug to no particular depth. The average depth was about 1.50 metres. The deepest grave (No. 28) was 2.93 metres below the surface of the ground, but that this unusual depth was not intended for the protection of the objects buried is proved by the burial being but poorly equipped. Without further data we have no means of estimating the exact amount of denudation that has taken place above each grave. It is, however, hardly likely to have been excessive owing to the consolidation of the soil.

As none of the workmen could tell when they were coming to a grave, the rule was made that when pottery was met with, they were to clear to the

¹ The cushion bricks were borrowed from other parts of the site and were, of course, of earlier date than the biscuit bricks.

same level some distance around. Col. Lane or myself then completed the excavation of the burial with a small knife. After a little training, we were able to allow one tribesman, by the name of Omran Mazuk, to clear graves as far down as the bones, leaving us the task of removing the objects and recording them. The fact that the large handled and brazier types of pottery were in most cases found in an upright position greatly assisted the location of graves without damage to their contents.

POSITION OF THE BODY

Of the thirty-eight graves recorded, twenty-four contained skeletons sufficiently preserved for their exact position to be noted (graves 5, 7-10, 12, 13, 15, 17-21, 23-28, 30-33, 35). Six of these skeletons were found with their heads to the south, or as close to it as possible (graves 9, 13, 20, 21, 23, 26). In four cases, the head was to the north or N.N.E. (graves 12, 17, 30, 35), and in six, to the west or W.S.W. (graves 15, 18, 19, 24, 25, 33). Three of the remaining burials were orientated to the N.W. (graves 10, 27, 28), and five to the S.W. (graves 5, 7, 8, 31, 32). It is, therefore, evident that no particular care was taken as to the direction in which the head lay.

The same disregard was paid to the side on which the body was placed; fifteen skeletons lay on the left side and nine on the right.¹ This absence of any rule as to the orientation and position of the body implies that the relatives of the deceased had no idea in their minds of any particular direction in which the soul of the dead man was going. This is quite at variance with the general practice and beliefs of early civilizations.

The position of the head in burial 33 was most unusual. The skull was found upright and looking directly to the east, though the body itself was on its left side facing to the north. This peculiar position is quite possible without severance of the head; it was probably due to the body being placed too far along in the grave so that the head was propped up against the end.

The suggestion has been made in more than one quarter that the people who founded the first Egyptian dynasty originally came from Mesopotamia and that they introduced the change that took place at that period in the orientation of the dead. The variation in position found in the graves of the "A" cemetery would tend to disprove this theory. Although the first dynasty of Egypt is of considerably earlier date than this cemetery, yet the rigid customs of that dynasty with regard to the orientation of the body persisted down to the twelfth dynasty, or even later; that is, to a period later than the date of the "A" cemetery at Kish.²

The lower limbs in most of the graves were in a semi-contracted position, the knees rarely being above the level of the pelvis. The legs in most cases were in a straggling attitude; no attempt was made to arrange them after

¹ Right side: graves 7, 8, 15, 18, 25, 27, 28, 32 and 35. In the oldest burials at Shuruppak, the bodies were laid on their right sides.

² It might, of course, be argued that the people who entered Egypt were not of the same race as the people who were buried in the "A" cemetery, but this is improbable.

the body was placed in the grave. The body in grave 15 was almost completely extended, the arms alone being contracted. Not a single body was found in the crouched position so common in the earliest graves of Egypt.

The hands were generally placed in front of the face with a copper bowl or small pottery jar or dish between them as if for the dead man to drink.¹ In graves 27, 32, and 33, the right or the left hand was used as a pillow, for which purpose a brazier was used in grave 19 (Plate V).² In burial 21 the head was placed upon the mouth of an upright jar with the result that the under portion of the skull was crushed for want of adequate support.

No remains of clothing were found, although careful search was made. The dampness of the soil would speedily have destroyed linen and leather. We know, however, that clothing did once cover the bodies in the graves from the fact that the round silver ornaments found in five of the burials were perforated with small holes to facilitate sewing them on to a garment of some kind (graves 10, 16, 21, 23, 32. Plate IV, 18, 20-23).

In two burials (Nos. 21 and 27), a few small fragments of coarse reed or rush matting were found which looked as if the bodies had been covered by or wrapped in this material. They were in a very poor state of preservation.

One burial only was found in a pottery urn (grave 36), that of a small child in a very crouched position, necessitated by the comparatively small size of the vessel. From the three pieces of pottery placed beside the urn, we must conclude that this burial is of the same period as the others under discussion.

PROPORTION OF SEXES

Out of the thirty-eight graves excavated, four were those of children (Nos. 3, 10, 18, 36). In graves 16 and 34, there were double burials,—a man and a woman in each case, as proved by the objects buried with them. In every burial found, the pelvis was in too bad a state of preservation to give any indication of the sex.

Nine graves (Nos. 2, 5, 11, 14, 16, 20, 28, 33, 34) contained bodies which must have been of the male sex, for they were accompanied by such masculine equipment as battle-axes, daggers and adzes. Articles for feminine use, such as spindles, needles, toilet cases, hair-pins, bracelets, etc., were found in sixteen graves (Nos. 4, 8, 9, 12, 13, 15, 16, 19, 21, 23, 24, 25, 27, 30, 32, 34). In fact, the only indication that the occupant of grave 15 was a woman was that no less than three hair-pins were found with the body.

In eleven graves it was impossible to determine the sex of the occupants owing to the lack of funeral equipment in addition to the decayed state of the pelvis (Nos. 1, 6, 7, 17, 22, 26, 29, 31, 35, 37, 38). It will thus be seen that out of a total of thirty-four graves, the four child-burials being excluded, there were nine definitely of the male sex and sixteen female. This proportion

¹ Graves 5, 21, 23, 25, 30, etc. (Plates V and VIII). The same thing was observed in the graves at Fara.

² The use of a hand as a pillow was also observed in the Shuruppak (Fara) cemetery.

of male to female is about the same as in the country districts of Iraq at the present day.

PRESERVATION OF BONES

We were fortunate in finding five skulls in a sufficiently good state of preservation to permit of their being embedded in wax and sent to Oxford for proper examination. As might be expected, but few skulls had withstood the heavy pressure of the earth with which they were covered. Even whole specimens could not be lifted without their crumbling, and Col. Lane and I found the only procedure possible was to bare the skull a few inches at a time, treating each successive portion with hot wax. As all the bones were very damp, the wax had to be heated to a high temperature to make it penetrate the substance of the bone. The skulls sent to Oxford came from graves 20, 21, 23, 28, and 31.

We were not so successful in preserving the other bones. They were always in a most deplorable condition and broke up even if they were blown upon. On this account, it was sometimes difficult even to determine the position of the body. In some cases it could only be done by tracing the lines of gray in the soil which were all that was left of the bones. Occasionally it was only possible to determine the direction in which the head was looking by the position of the teeth; and even these were sometimes in a very crumbled condition. This work had all to be done by ourselves, as we had no trained diggers on whom we could depend.

PIGMENT SHELLS

In most of the graves there were one or more small shells containing pigment. These shells were invariably a species of *Cardium*, averaging about 48 mm from the hinge to the edge. The two valves were usually found together. As a general rule, they were found with female bodies, but occasionally they were found with male bodies (Nos. 5, 11, 20, 33, etc., cf. Plate III, No. 8).

The pigments in these shells are white, light-green, blue, red, and black, of which the last color is the most common. From the appearance of the pigment in some of the shells, it must be concluded that it was smeared on the face with the finger, but sometimes a brush seems to have been used. Some of these pigment shells were evidently prepared solely for funeral equipment, as the small quantity of color in each shows no signs of ever having been disturbed. This is particularly noticeable in the case of a shell found in grave 15, which contains an untouched dab of green paint placed on the remains of some black paint already there.

In graves 8, 11, and 24, there were clean shells in addition to those containing pigment. The colors found, arranged in order of frequency, are: black 17 times, red 5, green 5, white 3, and blue 1. In none of the burials was

a complete set of pigments found; there were never more than two in the same grave.¹

The black paint is probably kohl, sulphide of antimony. The red is an oxide of iron. The green, which is of an apple-green shade, suggests malachite; but, whatever material it is, it appears to have been mixed with a white substance.²

These three colors are very similar to those found in predynastic graves in Egypt. They were probably used for the same purpose. The black pigment, which is in the form of a fine powder, was used for the eyes; the green, possibly for the same purpose.³ The red pigment may possibly have been employed for face ornamentation as at the present day.⁴ It seems to have been prepared with some kind of grease.⁵ The blue pigment is turquoise in color, but its composition is uncertain. The shells themselves probably came from the Persian Gulf or Indian Ocean. Nearly a third of the known species of *Cardiadae*, in number nearly 200, come from Indian waters. Most of the species are edible, and these shell-fish were doubtless a favorite diet with the people buried in the "A" cemetery. Numbers of shells of fresh-water mussels also have been found scattered about on the site of Kish. The position in which these pigment shells lie in a grave varies considerably. They have been found by the feet, near the middle of the body and close to the head, and they were very often put inside the pottery.

RUBBING STONES

Small pieces of sandstone, which owing to the action of salt are now always in an extremely friable state and even powdery, were often placed in the graves. They are always irregular in form and range from the size of a walnut to pieces measuring 30 x 15 cm. They are found in burials of both sexes and were probably used for rubbing. It is quite common in the East at the present day to see people of the poorer classes, of both sexes, and even children, rubbing the soles of their feet with pumice or sandstone to remove the hard skin, which if left is apt to crack and become sore. These rubbers were placed just anywhere in the graves (5, 9, 11, 15, 17, 18, 21, 33, etc.).

AMULETS

Only one amulet has been found in the "A" cemetery up to the present; in grave 8 which contained the skeleton of a young female. It is 69 mm long, 27 mm wide, 21 mm thick, and is rectangular in shape with rounded edges. A hole for a cord had been bored through it near the top, both sides of the

¹ Excepting grave 24, in which there were no less than four shells, two containing a black powder, one a white paste, and the fourth nothing.

² In graves 20, 24, and 32 shells were found containing a pasty white substance. This substance has a barely noticeable tinge of green in some places, which suggests that the original color has disappeared.

³ It has been suggested that green was used in ancient Egypt to protect the eyes from the glare of the sun in the same way that Eskimos apply it beneath the eyes to prevent snow-blindness.

⁴ Similar pigments were found in the Fara cemetery, but usually in small stone dishes.

⁵ It was found in burials 13, 23, 30, and 32, all of which were female.

stone being roughly flattened in this region to facilitate the operation. At first it was thought that the amulet was a hone, but the brown limestone of which it is made is far too soft for such a purpose. Similar objects have been found in other parts of Kish, principally on the site of the plano-convex building about half a mile N.N.W. of the "A" cemetery.¹ As this amulet was found close to the neck, it was probably worn on a string of beads (Plate I, No. 6).

One of the beads on a string around the neck in burial 16 is carved in the shape of a frog (Plate IV, No. 26). It is of lapis lazuli, and is of quite good workmanship. As it is the only bead of its kind on the necklace, it is possible that it also was worn as an amulet.

The suggested use as amulets of the silver medallions with raised central bosses which are described in the section on the jewellery is doubtful. They were probably intended simply for ornamentation, and have no other significance.

GLAZE

The use of glaze for cylinder-seals, beads, and other small objects was known in the period of the "A" cemetery. It was applied to pottery, as shown in Plate XVIII, No. 20, or to beads and other objects made of a white porous paste, a very similar composition to that used in ancient Egypt (Plate XVIII, No. 21).

It is usually in a fair state of preservation, but its original color, probably a deep blue, has been destroyed by the action of salt. All the glaze that has been found so far is quite white, or else tinged in places with a faint apple-green. The composition of which the glazed articles were made is now practically only held together by the glaze, so that all these objects are extremely fragile.

The technique of this work was very good. The glazes are even and well fired, and they have penetrated well into the material to which they were applied. Their surfaces, moreover, show very little pitting or porosity due to over-firing.

In our present state of knowledge, it is impossible to say at what period the art of glazing was introduced into Sumer. Some of the glazed cylindrical beads very closely resemble those of Egypt. They may have been introduced from that country *via* Syria in very early times.² But the fact that the number of examples of glazed work found in the "A" cemetery is comparatively small shows that the art was not yet extensively practised at that period. In graves 4, 12, 20, and 32, glazed beads were found which have turned quite brown. They must originally have been some other color than the usual deep blue (Plate IV, Nos. 31, 33).

METALS

The "A" cemetery was very rich in *copper* implements and tools, some of which are quite new to us. They are in an excellent state of preservation,

¹ See site marked as N on sketch-map in Plate VII.

² The glazed beads were either cylindrical or of the shape shown in Plate VII, No. 12.

especially those from the graves that had not been disturbed. That this should be so despite the fact that the soil is very salty implies that the metallurgy of the period was of a high order and that the copper used was very pure.

The fact that copper was well known to the Sumerians in very ancient times is proved by its being found in great quantities in the earliest sites. The region from which it was brought is still a matter of surmise. The question cannot be settled until exhaustive examination has been made of samples of tools and implements of the various Sumerian and Babylonian periods and also from the various mines which may have been used in those days. Sinai was the principal source from which the ancient Egyptians obtained copper, and the early inhabitants of Mesopotamia may also have obtained it from there. Copper was worked in Sinai as early as the first dynasty of Egypt and still earlier by the Semites dwelling there.

A place called Kimash, which has been located in the Zagros range, is mentioned by a priest-king of Lagash in an inscription as early as 2600 B.C.: "From Kimash I got copper, and from the mountains of Meluhha I got iron and gold."

Besides these sources, there are other probable places near to Kish. In the upper parts of the Tigris valley near Pontus there are said to be several old copper mines, and another ancient mine exists near Arghana-Maden in Kurdistan. This last mine was exceptionally rich. It was worked by the Germans during the war. The earlier workings have now been destroyed, but that it was known to the ancients is proved by a stele of Naram-Sin being found in the vicinity. Lt.-Col. Sykes mentions a copper mine behind Sabzawar in Persia which is being worked at the present day.¹ Cyprus also gave copper to the ancient world; these mines date back to an early period.

That *lead* was also known in Sumerian times is evident from two vessels of that metal being found in the cemetery (Plate XX, No. 2). Melted fragments were found in several parts of Kish in buildings of the earlier type of plano-convex brick.

This metal is mined in Persia at the present day, where it occurs in the form of galena, a compound of lead and sulphur. The process of extracting the pure metal from galena is a very simple one; the galena is roasted until the sulphur is burned away. Another source from which the Sumerians may possibly have obtained their lead is the mines between the Red Sea and the Nile; but that it came from Persia is much more probable.

Comparatively few *silver* objects were found in the "A" cemetery. They include the thin silver handle of a dagger and various objects of jewellery (Plates III, No. 4 and XVII, No. 9). Silver was always a rare metal in the ancient world; in some countries it was even regarded as equal to gold in value. The reason for its being rare in the past was that it is so seldom found in its native state.² In Persia, as far as is known at present, it only occurs in

¹ P. M. SYKES, *History of Persia*, Vol. I, p. 37.

² DEL MAR, *History of Precious Metals*, Chap. XXX.

lead in a small proportion up to not more than one per cent.¹ The process of extracting silver from lead is far simpler than its extraction from its ores; it consists merely in burning away the lead and recovering the silver from the residue. We have proof that silver was thus manufactured in Elam from a letter to a certain Enetarzi, a ruler after the first dynasty of Lagash (about 2800 B.C.), who says that this metal formed part of some booty taken from that country. Whether this booty was in the form of bullion or of silver vessels is not mentioned (cf. *Revue d'Assyriologie*, Vol. VI, p. 142).

Not a single *gold* article, nor any trace of gold, was found in any of the graves of the "A" cemetery, though we know it was known in a still earlier period. But, as many of the graves had been disturbed anciently, it is possible that articles of this metal had been stolen. Several fine gold objects were found during the season 1924-25 in the same stratum.

MINERALS

The stones most favored by the Sumerians for beads and other ornaments were lapis lazuli and carnelian.

The *lapis lazuli* was probably brought from Persia, in which country it is plentiful. That recovered from the "A" cemetery is either a dark or medium blue with no pyrites in it.²

The source of the *carnelian* is difficult to trace. It could have come either from Arabia, where it is common, or from the stony river beds to the north. Its color is in most cases a clear bright red, which may have been natural or the result of special treatment, such as roasting, which is practised in India at the present day.

The Sumerians seem to have found some difficulty in working lapis lazuli. In most cases it is merely rubbed down and not polished.³ Very few of the lapis-lazuli beads are perfect in shape, and their surfaces show a certain amount of unintentional facetting. Lapis lazuli is not so hard a stone as carnelian, yet articles made of the latter material are well shaped and beautifully polished. The two kinds of stone do not seem to have been worked by the same people, and it is possible that articles of one or the other stone were not manufactured in Sumer, but were imported ready made. If so, the objects made of lapis lazuli were probably those manufactured at home, while the carnelian beads came from outside, either from Egypt, whose people seem to have been very skillful at this work, or else from a third country that supplied both Egypt and Sumer.

Haematite is rare in the "A" cemetery. Its use is confined to two cylinder seals (Plate VI, Nos. 2 and 9) and one small bead from burial 21. The

¹ The traveller Tavernier, who visited Persia in the middle of the seventeenth century, mentions the silver mines of Kerven.

² DE MORGAN (*Mémoires sur la Délégation en Perse*, Vol. VIII, p. 53) states that lapis lazuli was originally worked near Kashan, but that the site of the mine is unknown. Mount Bilki, which according to an Assyrian record was a mountain of lapis lazuli, may perhaps be identified with Mount Demavand which is not far distant from Kashan. P. M. SYKES, *History of Persia*, Vol. I, p. 36.

³ Lapis lazuli is, of course, capable of taking a high degree of polish.

scarcity of this substance in the graves is probably due to the difficulty of obtaining the ore, and not to any difficulty in working it, as it is not particularly hard.

Two stones very rarely found are *jasper* and *rock-crystal*. They only occurred in two graves (Nos. 27 and 23, respectively) in the form of beads. *Calcite* was much used in making cylinder seals (Plate VI, No. 4) and beads and to ornament hairpins, for it is soft enough to be very easily worked. It was found in the country itself, there being a plentiful supply in the western desert. *Limestone* was used to make four cylinder seals (Plate VI, Nos. 1, 16) and a few beads. The kind of stone employed was fairly hard, either gray or dark brown in color, and capable of taking a dull polish. It does not seem from its rarity to have been a popular stone for personal ornaments. It could have been brought from any of the countries bordering Sumer.

A bituminous limestone was used in making a cylinder seal found in grave 12 (Plate VI, No. 19). This material, as is also shown by the remains of a carved bowl found at a lower level than the graves, withstands the action of salt and time very well. One wishes that it had been more extensively employed.

The frequent use of *bitumen*, especially in building, shows that this material was as easily obtained in the period to which this cemetery belongs as in later times. It must have been brought down the Euphrates from Hit, where it is still collected in a small way from the bitumen pools.

A bead made of *serpentine* was found in grave 15. It was the only object made of this kind that has been discovered in the cemetery.

STONE VESSELS

No stone vessels were found in the graves of the "A" cemetery, though broken fragments occurred on the same site at various levels, which will be dealt with in a later publication. A possible reason for the absence of objects of this nature is that they were perhaps considered too valuable to be placed with the dead.

UNUSUAL OBJECTS

A rare object found in grave 2 was a cup which had been made from an ostrich shell by cutting about one-third of the top of the shell away and roughly smoothing the edge. It was the only one of its kind found in the cemetery, and it was in such a very bad condition with so many pieces missing that it could neither be restored nor drawn. The remains of a similar cup were found in one of the chambers of a large building of plano-convex bricks, about half a mile from the "A" cemetery, which appears to be of the same date. The ostrich is still found in the Arabian desert, and was doubtless plentiful in early times. Its feathers as well as its eggs were utilized by the ancients.

The model pottery brazier, No. 23 in Plate VII, ought perhaps to have been included with the pottery, but its very small size prohibited this. Though it does not actually come from a recorded grave, but from some rubbish near

the surface on the north slope of the mound, it was, nevertheless, probably washed out of a burial. It is hand-made, and must have been a child's toy.

Two toy clay animals were found with the remains of a child in an urn-burial in grave 36. It is difficult to say what these animals were supposed to be,—goats, most probably. There was a hole through the head just below the eyes in one of the animals for it to be pulled along with a string.

In burial 11 an object of burnt clay was found which is obviously a model battle-axe (Plate VII, No. 24). It is 81 mm long by 78 mm wide at the head and 16 mm thick at the same place. It is somewhat roughly made and provided with two holes for tying it to its handle. The lower portion has a fairly good edge. This, as well as the axes represented in Plate XVII (Nos. 1, 4, and 8), is especially valuable as showing a type of weapon in use at the period. The burial in which it was found had been disturbed anciently, so that the exact position of the battle-axe in relation to the body could not be ascertained.

The appended table of the various objects found in the "A" cemetery has been drawn up for purposes of reference. Against the number of each grave is placed the sex, except where it is uncertain. The numbers of the various objects found in each grave are given. In the case of the beads, the cross merely indicates that beads were found in that particular grave, ranging in number from one to a whole string. The various objects are dealt with in detail in the text, the pottery having a separate tabulation.

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CHAPTER

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ND IN GRAVES

CHAPTER V

CHAPTER VI

CHAPTER I

Items	Copper Bowls	Lead Bowls	Handled Bowls	Medallions	Fillets	Ear-rings	Bracelets	Finger- rings	Beads	Cylinder Seals	Amulets	Rubbers	Pigment Shells	Toys
									X	I				
2									X					
										I				
						2			X			I	2	
						2			X	I	I		I	
		I				2				I		I	2	
				I		2	2		X					
2										I		I	2	
		I							X	I			I	
									X				2	
									X					
									X	I		I	2	
I									X	I		I	2	
I				I		I	I		X	3	I		2	
												I		
						I			X			I	2	
						3			X	I			2	
									X				2	
2			I	I	I	3	I		X	I		I	2	
I			I	I		I	I	I	X	3			2	
			I						X	I			4	
									X					
										I				
									X					
									X					
						I	3						2	
						I								
				I					X	3			2	
									X			I	2	
3			I				I		X	I			2	
									X					2

II. POTTERY

HANDLED POTTERY TYPE A Plates I, No. 5, IX and X

A specimen of the handled pottery shown in Plates I, IX and X was found in practically every grave in the "A" cemetery at Ingharra. In three graves two jars of this type were found, one large and the other small.¹ This handled pottery is peculiar and quite unlike any that has been found up to the present in Mesopotamia or elsewhere. It is possible that this pottery is either a local type or that it was confined to the northern part of Sumer. Only more extended excavations in various parts of Mesopotamia will decide this point. The pottery is wheel-made of a well-kneaded clay and under medium magnification shows but little porosity and little or no foreign matter. In color it ranges from a light salmon-pink to a deep red. The surfaces of a few jars are coated with a substance which is yellow-drab in color. This may be a slip, but it is more probably a salt incrustation, as there is a certain amount of sparkle.²

The ware is thick, in some cases as much as 1 cm, but not unduly so when the size and purpose of the jars are considered. The baking is good; though most of the jars were found broken through earth pressure, it was possible to repair them, despite many of the pieces being heavily saturated with salt. A few only—jars which were found in graves close to the surface of the ground—were in a bad state. Every example of this handled pottery was made in three pieces, joined together at the shoulder and between body and base. The joining was on the whole skillfully done, and is difficult to detect in the unbroken examples. Sometimes, however, the parts were not equally damp when they were put together and therefore failed to adhere properly. This fault was more frequent in joining on the bases, which were always hand-made.

It will be seen in the two plates in which this type of pottery is shown that the general design is the same. The sole departure from the general rule is No. 21 (Plate X), which has an unusually high base.³ The chief peculiarity about this ware is the handle which is ornamented in high relief with the features and breasts of a woman, the nose especially being very prominent. In every jar of this type which has been found up to the present, it is a female figure that is represented on the handle, never that of a male. The handles were made of tubular pieces of clay which were sometimes left hollow and sometimes flattened. Three of the jars are especially interesting because the hollow handle communicates with the interior of the jar, though

¹ Graves 1, 18 and 23. The contents of graves 1 and 18 had been disturbed. The first contained no bones, and the second those of a child. It is possible that each of these burials was a double one, as, for instance, mother and child, and that the smaller jar was provided for the child.

² Jars 9, 16, and 17 are certainly washed over with a thin cream slip.

³ Compare this base with type E pottery (Plate XIV, Nos. 8-18).

the extreme upper portion of the handle has been squeezed so flat as to allow only a minute drop of water to pass through (Burials 2, 23, 33; Plate X, Nos. 17, 22, 24). Most of the handles were secured to the shoulder of the jar by cutting a hole in the latter and passing the end of the handle through. This made a strong joint. In nearly all cases the joint is rough, as seen from the inside of the jar, though care was taken to conceal it on the outside. In some examples, the end of the handle was pared or thinned, so that a flange rested against the surface of the jar; this was afterwards carefully pressed down all round to ensure as close adherence as possible.

The feminine features on the handles were formed with the addition of pellets of clay. In some rare cases the nose was squeezed up out of the handle, but in general it was added and the joint carefully smoothed over. The two breasts were always added and range in shape from rough nodules to full, rounded forms.

As a rule, the eyes are placed on either side of the nose itself or as close to it as possible. They are in some cases simply rough clay pellets, in others cut disks of clay. Occasionally, further refinement was effected by impressing a circular mark in the centre of each eye to represent the pupil (Plates IX, No. 7; X, Nos. 1, 7, 9). Jar No. 9 has no eyes; the handle is very roughly made (see also Plate II, Nos. 1-9). In one case (Plate II, No. 7 and Plate IX, No. 6), the pupil of the eye is represented by the addition of a second and smaller pellet in the middle of the first.

Ears are not very common. If present, they are mere projections on the corners of the squared top of the handle (Plates IX and X, Nos. 22, 24; II, Nos. 4, 5). Eyebrows are also rare; they are represented by thin strips of clay placed above nose and eyes (Plates II, Nos. 6-9; IX and X, Nos. 1, 4, 6, 21). They are very prominent in Plate II, Nos. 7 and 8, giving the face a pronounced owl-like appearance. It is possible in Nos. 6, 8, and 9 (Plate II), especially in No. 6, that these strips of clay represent hair as well.

Most of the handles are further ornamented with incised markings made with a pointed stick. In the majority of cases, these are either rough and irregular scratches or a series of oblique parallel lines running from left to right and right to left alternately. In rare cases, there are rough imitations of necklaces of three or more strings of beads (Plates II, No. 8; IX and X, Nos. 2, 6, 19, 21, 22). A feature on some of the handles is a roughly hatched triangle just below the breasts, which represents the Mons Veneris (Plates II, Nos. 7, 8; IX and X, Nos. 6, 21). In some jars, however, this portion of the body is shown below the handle on the body of the jar, immediately below the notched beading of the shoulder (Plate X, Nos. 22, 23).

There can be little doubt that the origin of these handles was a spout through which to pour the contents of the jar. This is borne out by the facts that they were all made from tubular pieces of clay, that some retain this shape and that the cavity of the handle in some cases communicates with the interior of the jar. Another important point is that none of the handles is

actually secured to the rim of the jar, though most rest against it, or are separated from it by a distance of a few millimetres only. In fact, some of the handles look so insecure that one hesitates to lift the jars by them. It is probable that if this type of jar had lasted over a longer period, we should have seen the gradual disappearance of the figure and the eventual joining up of the top of the handle to the rim of the jar for added strength. The spouted jar is very common in early Mesopotamian pottery, but it was, of course, only suitable for vessels used for liquids.

It is uncertain at present whether these handled jars were made for ceremonial purposes. One was found in every burial of importance, and it would seem likely, therefore, that they were in everyday use. This suggestion is borne out by the fact that a few of the jars were slightly broken when placed in the graves; the missing pieces were not to be found, though each grave was carefully cleared either by Col. Lane or myself. The figures on the handles suggest that the contents of the jars were under the protection of a goddess; in all probability, a water-goddess. Who this deity was, it is impossible to say with any certainty, as the cult or cults of the temples that lie under the mounds known as Ingharra are not yet known.¹ The fact that these jars were generally found in an upright position suggests that they contained water for drinking or for ablutions in the owner's next existence.

In every one of thirteen graves a handled jar was found; behind the head in five cases, in front of the head in three, and in three behind the back near the pelvis. In one grave, the jar was placed behind the shoulder, in another behind the feet. The usual position, therefore, of these jars is behind the body. It will already have been noticed that each jar is decorated on the shoulder as well as on the handle. In Nos. 2-5 (Plate IX), this decoration is very poor and consists solely of rough hatching done with a sharp point. The most usual design is a series of large triangles, apex upwards, the interiors of which are filled in with lines crossing one another to form a series of rough lozenges. Another common motive is two interlacing zig-zag lines evidently made with a comb-like implement, for they are in groups of parallel lines, three, four, and sometimes five in number. A flint with a serrated edge could hardly have been used for these lines, as they are on the whole too regular. Some of them begin or end in awkward places, which seems to suggest that they were made by a comb fixed at the end of a stick. The decoration as a whole is fairly well done, and in some examples an attempt was made to achieve regularity.

A simple decoration consisting of a single zig-zag line, also made with a comb, is shown in Nos. 16 and 17 (Plate X). Decoration in two registers is somewhat rare, but four examples were found (Plate X, Nos. 21-24). In No. 21, the design is the same in both registers, but the other numbers show more variety. A striking peculiarity of this pottery is the presence of a projecting

¹ Prof. Langdon suggests that the figure represents either Nintud, the mother goddess, or Nina, the water goddess, an early form of Ishtar.

beading around the jars at the junction of neck and body. In most cases, this beading projects very considerably from the shoulder of the jar. The probable origin of this form of decoration was the inability of the potter to make this type of jar in a single piece. It would seem that in the course of manufacture the upper edge of the body of the jar was splayed slightly outward, in order that the lower edge of the neck might fit into it, forming a kind of plumber's joint. When this junction had been properly effected, the edge of the lower part of the jar was turned over against the shoulder, and any irregularity caused by the join, whether inside or out, was then rectified by smearing the joint over with clay. This method of building a jar had its defects owing to the union not always being true with the result that complete adherence all round did not always take place.

In all the larger jars, this rim was then heavily notched all round by a piece of wood or bone with a rounded surface. Generally each notch is slightly oblique, running either to left or right, but there are examples where the markings are vertical. Besides being an ornament, the notching must have assisted in pressing the two parts of the jar together.¹ To complete the decoration most of the jars have a simple series of points pricked around the junction of the neck and sloping shoulder. This was done with a pointed instrument held almost vertically, each stroke being directed downward.

These jars are on the whole well made, especially their upper portions which are invariably better finished than the bodies. The latter show undulations and finger-grooving in some of the less skilfully finished examples. The surfaces are smooth and unpolished. The interiors of the jars, as a rule, show no very noticeable finger-grooving, the surprising absence of this being doubtless due to the making of the jars in separate pieces. Any roughness in a jar was to be found in its hand-made portions, namely the handle or the ring forming its base. Such defects were probably caused in making these two portions adhere properly to the body of the jar.

In the style of decoration, but not in form, this pottery resembles early Hittite pottery, though it is, of course, of considerably earlier date. Its simple geometric decoration may not have been borrowed; it might as easily have originated in the country in which it is found as elsewhere.² These jars range in size from 10.5 to 39 cm in height (Plate IX, Nos. 10 and 12).

POTTERY BRAZIERS TYPE B Plate I, No. 4; Plates XI and XII

Only the very poorest graves or those in a badly disturbed state lacked a brazier which was evidently considered an essential part of the funeral equipment. These braziers were always of heavy ware, and not so well finished off as were the handled jars. The stems seem unnecessarily clumsy,

¹ It should be noticed that the jar shown as No. 21 (Plate X) has a plain beading around its shoulder. It is the only jar of this type in which the notching was omitted.

² The notched beading at the junction of the shoulder and body in this pottery in a superficial way resembles the beading in a similar position on some of the Palestine pottery dated to the "First Semitic Period." The use of the combed ornament was also common in Palestine in the same period, which is dated to 2000-1800 B. C.

ranging, as they do, from 1 to 1.5 cm in thickness. The fine example numbered 18 on Plate XII is 44.5 cm high, and the smallest size (Plate XI, No. 5) 12 cm high. It will be noticed that these braziers exhibit a considerable diversity both in shape and size. This is perhaps due to the complex nature of this type of pottery, each specimen of which must have taken a considerable time to make.

Like the handled ware, these braziers were made in two pieces which were joined together before the clay was dry. The upper portion or dish was always better finished off than the stem and base; the latter portion always has very pronounced finger-grooving inside caused by the effort required to pull up such a heavy mass of clay while on the wheel.¹

When the bases are decorated, their roughness is usually accentuated by the dragging of the surface of the pottery by the point or comb with which the designs were scratched. In the specimens found up to the present no attempt was made to remove this blemish.² The same clay was used as for the handled ware, and the color of the two types of pottery was very similar, but in many cases the braziers were imperfectly baked. It would appear from this that not sufficient allowance was made for the thickness of the material, with the result that many of the vessels show the characteristic gray tinge in the thickness of the clay which is the mark of imperfect firing. Unfortunately salt has played havoc with much of this ware, owing to its shape and its defective baking, with the result that only one specimen was recovered whole and the remainder in many pieces, most of which were badly scaled. The very form of the braziers was ill adapted to stand the pressure of the grave filling, which broke off their dishes and basal portions.

With two exceptions, these braziers were all found in an upright position. In burial 19, the brazier was placed as a pillow for the dead man (Plate V). It lay on the body in burial 8, where it had perhaps fallen when the grave was filled in. Its usual position in the grave was behind the body. Of fourteen graves which were in a tolerable state of preservation, the brazier was found in seven, standing behind the head or shoulders; in four, it was behind the pelvis or the feet. In three instances only, it was placed in front of the head, but at some distance from it. The vessels of this type have been called "braziers" owing to their peculiar construction. It was, first of all, thought that they were used for food. The presence, however, of what are evidently ventilation holes in many of the specimens (Nos. 4, 6, 12-14, 17), proves that they were made for heating purposes, the holes serving to cool the stem so that the utensil could be readily moved from place to place. Food, however hot, could never sufficiently heat the stem for ventilation to be necessary, but in the case of a fuel-like charcoal, especially if constantly replenished, such holes would be required. It must be admitted, however, that not a single brazier was

¹ In the case of No. 4 in Plate I, also No. 9 in Plate XI, the two portions were apparently fitted together and then placed on the wheel once more for a final trimming-up.

² In No. 14 the ventilation holes were even bored after the decoration was finished, with the result that a heavy burr has been left around the edges of the holes.

found to contain any vestiges of fuel, nor even to show the marks of burning. But such traces would be readily removed by time and the action of salt; and if charcoal were used, it must be remembered that it is a very clean fuel. The ventilation holes were bored with a stick varying from 1 to 1½ cm in diameter. In the vessels numbered 4, 6, 12, 14, and 17, these holes are in the base, two close together on either side. In No. 13, there is a single hole on either side of the stem, close under the dish.

On examining the two plates on which this pottery is shown, it will be seen that the simplest form of brazier is unornamented in any way. It has a plain wide base and dish, the latter with a deep groove around its edge. In Nos. 2, 3, 4, and 5, the base is still plain with the exception of a simple grooving on No. 2. The rims of the dishes, however, are heavily grooved, the ridges above and below being coarsely notched with a stick. In No. 6, however, only the upper ridge is treated in this way. No. 7 is interesting, because the heavy grooving of its base is spiral in form. Up to the present, it is the only brazier that has been found to show this feature. In Nos. 9, 10, and 11, the base of the brazier is roughly decorated with criss-cross lines, made with a fine point in the first two and with a heavier one in the third. No. 11 is also distinguished by the upper edge of the base being notched,—a unique feature up to the present.

Brazier No. 12 has several interesting points. There is a notched beading just above the middle of the stem and another above the base, which is ornamented with a chevron design of three lines made separately. In Nos. 13 and 14 we have a more elaborate form of decoration, especially in the latter, in which there is a double notched beading just above the base which is roughly hatched with a single point. No. 13 has two forms of decoration on its base, the upper one made with a single point in groups of three lines, arranged chevron-wise. The fine linework of the lower register is also made with a single point. No. 15 is an exceptionally neat brazier and graceful in form. A broad, notched beading, below which is a row of chevrons made with a four-toothed comb, decorates the base of the stem. This piece of pottery has been washed with a light cream slip, and through over-baking its dish has become slightly twisted.

No. 16 is rather clumsy. On the base and the lower part of the stem, a simple design was drawn with a seven-toothed comb. The outer edges of the dishes of Nos. 16, 18, and 20 are scored heavily with three horizontal lines instead of the grooving made on the wheel. This scoring is done with a stick, and further ornamentation is afforded by a series of vertical lines (set slightly obliquely, especially in the case of No. 18), which break up the surface of the rim into a number of small squares. The bases of Nos. 18 and 20 are decorated with lines made with combs of three and five teeth, respectively.

No. 19 is a curious object. Both the top and base are broken off, and its surface is decorated with a roughly hatched pattern incised in the clay with a point, and moreover there are six horizontal ribs which are notched.

There can be no doubt that we have here part of the stem of an unusually decorated brazier. It was found in the cemetery mound, lying by itself in loose débris. The unusually small brazier (Plate XI, No. 5) was found with the small handled jar (Plate IX, No. 9). This set of pottery probably belonged to a child's grave. The bones of the burial could not be found and had doubtless perished because of their extreme fragility. The only other pottery found with these two pieces was a number of small dishes.

As has already been mentioned, these braziers, like the handled ware, ranged in color from salmon-pink to a dark red. There were, however, three exceptions, Nos. 3, 5, and 15, which were washed over with a thin cream slip. The handled jars from the same burials had been similarly treated. Our knowledge is at present insufficient to determine the sequence of the graves in which handled ware and braziers were found, but the manner of their decoration helps us a little. I would put down the undecorated ware as being necessarily earlier than those pieces which were decorated with a single point, as Nos. 11, 12, and 14. These three braziers were accompanied by handled jars that were also decorated with a single point. There are a few cases, however, in which the brazier has been decorated with a single point and the handled jar accompanying it with combed lines; and the reverse also occurs.

Most of the braziers and handled jars have combed lines made with an instrument with from three to seven teeth, and these are probably of slightly later date. The flat rim of practically every brazier was ornamented with a simple, wavy line. This seems to have been considered an essential part of the decoration, and is only missing in Nos. 11, 13, 16, 18, and 20, and in those braziers which are entirely undecorated. Unfortunately, we cannot compare this ware with any other of the same kind elsewhere, as nothing quite like it has as yet been found.¹ It has a remote resemblance to the Hittite pottery, named "champagne cups," that have been found in cist burials in Central and North Syria. These belong to the bronze age (early Hittite), approximately 1100 B.C., but our examples are of a much earlier date.

A very similar form of vessel, undecorated and made of a black and red ware like the predynastic and pan-grave pottery of Egypt, has been found in the pre-historic burials (dolmens and cairns) in southern India. These vessels are about one-third the size of our braziers. This Indian pottery has been conjecturally dated to about 2500 B.C., and is supposed to have been used for burning incense.

It has been noted that a specimen or sometimes two of the handled ware already discussed accompanied these braziers in the burials in which they were found. In some cases the decoration on the two vessels is practically the same, suggesting that both were made by the same potter. This is an interesting point, for most potters in the Orient at the present day specialize in certain

¹ Since the above was written, some results of the Fara excavations have been published by WALTER ANDRAE, *Die archaischen Ishtar-Tempel in Assur*, Plates XVIII, XIX, XX. In the cemetery at Fara similar braziers were found to those discovered at Kish. They were, however, of a more degraded type. Andrae has dated them in a period named G, or before 3000 B.C.

shapes, and one or two, and sometimes more, makers may have to be visited to obtain the particular type of jar desired.

STRAIGHT-SHOULDERED WARE TYPE C Plate XIII

This type of ware is very frequently found in the Ingharra burials, two, three, and sometimes five specimens being found in a grave.¹ But no special position in relation to the body was allotted to them. The shape is very characteristic, each jar having a well-defined neck and shoulder, the latter forming a sharp angle with the body. The general shape is not dissimilar to some of the twelfth dynasty ware of Egypt, except that the latter ware has an almost flat base. This pottery is not particularly thin for its size, and in most cases has a dragged, uneven surface, especially on the lower portion of the jar. The clay is light red, well kneaded, and in the majority of cases well baked. Three specimens have apparently been coated with a thin cream slip, but a more minute examination than could be given in the field is necessary to prove this (Nos. 1, 6, and 18; graves 1, 2, and 6). In a great many cases the clay was worked in too dry a condition, with the result that, besides being uneven, the surface of the pottery is striated. On the whole, however, the ware is of creditable workmanship. All examples found up to the present have been made on a wheel.

The ring-like base with which each specimen is provided was added later. In most instances it was trimmed up on the wheel after being added. The joining was not always perfectly done, and the base has sometimes parted company with its jar, owing principally to the action of salt. It is suspected, but not at present proved, that the neck and shoulder of the jar were added to the body, the join being very skillfully made and very difficult to detect. No. 23 was found to have parted into two in this region, the break being too even and regular not to have been other than the result of a join giving way. The simpler type of jar has a plain neck as in Nos. 1-4. Numbers 5-7 have thick necks with the rim formed by turning over the top. In Nos. 8-12, the necks are more complex, definite form being afforded by a scored line at the junction of neck and shoulder. No. 12 is most unusual owing to its great height as compared with its breadth. The examples that follow are squatter in form. Their rims and necks are more shapely, being improved either by a single fluting in Nos. 15-19 and by a double one in No. 20. The angle between the shoulder and body is also more pronounced, especially in jars 16, 18-20.

Nos. 21-25 all have fairly simple necks and rims, but they are especially interesting in that their shoulders are ornamented with scored lines. In the first two, this scoring is spiral and made with a toothed instrument. Nos. 24 and 25 have been similarly ornamented, but the groups of lines run straight, not spirally, round the shoulders of the vessels. The latter is also noticeable

¹ Burials 16 and 34 each contained three specimens; in burial 2 there were four; burial 5 contained five.

on account of the beading around it, which, though unnotched, is similar to that on the handled jars.

As in the case of the other types of ware, it is not at present possible to assign proper sequence dating owing to the small number of graves as yet excavated. Nor is it always the case that the jars of the same type found in the same grave were exactly similar. For instance, Nos. 1 and 16 which were found together in grave 2 are of the same general type, yet differ considerably in detail from one another. Jar No. 23 is of especial interest. Its base is formed by working the lower part of the body downward and outward with the fingers to form a ring. The junction of the shoulder and body is ornamented with short lines running obliquely, and the shoulder itself is roughly decorated with two wavy lines scratched with a point. It is of light red ware with a yellowish face, which seems to be the result of a salty deposit.

SPOUTED VESSELS TYPE D Plate XIV

The spouted jar, though frequently found at an earlier period,¹ is a rare feature in the cemetery, only two examples being found (Burials 23 and 24; Nos. 4 and 5). The other examples illustrated in the plate are included for comparison only; but, as they come from the same site and were found approximately at the same levels, there is reason to think that they are of the same date as the burials.

Jars Nos. 4 and 5 are very similar, except for their bases. The base of No. 4 has a number of focused grooves scored upon it (Plate XV, A). This is a peculiarity which is very frequently found in the simpler types of pottery in this cemetery (Plate XV, Nos. 16-46). The scoring seems to have been produced by the surface of the wheel upon which the pottery was turned, being lightly covered with loose sand. The jar when finished was removed from the wheel by a sliding motion before the latter had ceased revolving, as is shown by the scoring, which is always well pronounced, taking the form of loops passing through a single point situated somewhere near the edge of the base. When scoring is present, the base of the jar is always rough and uneven, and it appears that a considerable amount of force was needed to remove it from the wheel.

Nos. 4 and 5 are both somewhat roughly made with irregular surfaces; they appear to have been made on a slow wheel. In each the spout, which is large as compared with the sizes of the vessels, is hand-made, and is skillfully joined on. No. 1 has a slightly convex and uneven base. The spout is hand-made, and the junction between it and the jar well finished, both inside and out. A spongy material, brown in color, which was found at the bottom of this jar is being analyzed. The grooves scratched with a point at the base of the neck and immediately below are a very unusual ornamentation in this type of jar.

¹ In a plano-convex building below the cemetery and in other parts of the site of Kish. These sites will be dealt with in a later publication.

No. 2 is unusual in shape. It has a small flat, unsteady base and a thick rim. The spout is rudimentary. No. 3 has a spout out of all proportion to the size of the jar. It has been joined on very unskillfully, and the result is ugly. This type of ware is made of an entirely different clay from that used in other pottery found in the cemetery. It is straw-colored or light yellow, and is hard baked. The clay is granular in appearance, and contains very little foreign matter. The baking is not responsible for the color of this ware, as will be explained below. It bears a certain resemblance to the clay used in some Hammurabi and Neo-Babylonian pottery found at Kish, though most of the pottery of these periods is soft baked. It very closely resembles alluvial clays found on the surface of the ground in most parts of Mesopotamia, as distinct from the river clays which are considerably darker in color. Practically all the pottery found in the "A" cemetery was made from the latter material.

Spouted vessels are a very early type of Sumerian pottery, and they have survived down to the present day in Iraq. The type is apparently not now found in Asia Minor, but it is in every-day use in Syria, and I have come across a few examples in Egypt, which, however, may have been imported. It has been found in Palestine and dated there to the first Semitic period (2000-1800 B.C.) and again to the fourth Semitic period (1000-550 B.C.). And the same kind of pottery will doubtless be found in Syria when the archæology of that country has been properly studied. This type of jar was used for drinking. The vessel was held above the level of the mouth, into which the water was poured without contact with the lips. This requires a certain amount of practice, as those who essay the feat with the modern spouted jars find out.

CUP-BASED POTTERY TYPE E Plate XIV

A very striking form of pottery is the ware shown in Plate XIV (Nos. 6-18). It is not at all common in the "A" cemetery, many graves being without a specimen, whereas others contain two (Nos. 10-12, 14-17; graves 1, 9, 12-14, 24, 29, 32, 34). Owing to their shape and to the thinness of the ware, few of the examples that were found have survived the pressure of the earth, to which the bases especially have succumbed. They have also suffered badly from the action of salt. This ware is made of fine, well-kneaded, dark-red clay. But though the shapes and proportions of the vases are so good, most of the examples found are somewhat roughly finished, frequently with striated and irregular surfaces.¹

The jars were always in an upright position and placed near the head of the burial,—usually in front of the face. When two jars were present, they were close together. The base was always added to the vessel in the course of construction. In the majority of cases, this was so skillfully done that it is probable that after the base was affixed the jar was returned to the wheel for a final trimming-up. As in most of the better pottery in the graves, the upper part of these vessels was better finished than the lower. It will be seen

¹ Nos. 10, 11, and 12 appear to have been washed over with a thin cream slip.

that the rims are all alike, flat and ledge-like in form. In Nos. 17 and 18, the base is very considerably shortened. No. 14 is peculiar in that a small spiral button has been left at the bottom inside,—another proof that no particular care was taken in the finish of these vessels.

It has been stated that this pottery was made of a dark-red clay. There are, however, three exceptions,—Nos. 6-8, in which the material used is ash-colored, probably owing to dung¹ or some similar substance being kneaded with the clay. Unfortunately, none of these three pieces of pottery was found in a recorded grave. Nos. 6 and 8 come from the cemetery mound, and No. 7 from a large plano-convex building about half a mile away. They are, however, so allied by shape with the type under discussion that it has appeared advisable to include them in it (see also Plate I, Nos. 2 and 3).

No. 6 is dark-gray in color. Its neck is decorated by deeply pricked lines crossing one another obliquely, thus forming a series of lozenges. The shoulder is ornamented by a double line of small circles, $7\frac{1}{2}$ mm in diameter, which were deeply incised in the clay with a round instrument. Each circle has a smaller circle inside it, and both circles and pricked lines were probably filled in with a white paste as in jar No. 7. The jar had a cup-like base, which is now missing, but the mark of the join still remains.

No. 7 is light-gray, thin for its size and well made. Three rows of hollows, which were filled in with a white paste resembling gypsum, decorate the shoulder. The hollows are about 2 mm in diameter, and though not undercut in any way, a slight ridge or burr around the edge of each serves to hold the paste, which forms a kind of small white boss.

The two lower rows of bosses are separated by an incised line which is also filled in with white. The surface of the jar is smooth, but unpolished. Its base is small and only just sufficient to allow it to stand steadily. Both these jars have traces of some black material, which to the casual eye resembles bitumen, adhering to the inner and outer surfaces. This is probably the remains of some scented fat or ointment. No indications of similar contents were found in any other jars of this type, which means that they were placed in the grave empty or that their contents have entirely disappeared. The squat shape and wide mouth of these vessels in themselves suggest that their contents were other than a liquid.

The finding of these two vessels with black and white incised decoration indicates, I think, that this method of ornamentation was practised in Sumer; it perhaps originated there. That these two jars were not imported is strongly indicated by their being similar in shape and form to the undecorated vessels of the ordinary red ware. It is, of course, possible to argue that the whole of the pottery of this type was imported, but I venture to think that the particularly fragile nature of these jars itself precludes this possibility.

No. 8 is of dark-colored clay and entirely undecorated; but it is noteworthy on account of its being unusually tall for its width. It is a very graceful jar.

¹ This substance is still used in Palestine and Syria to make a dark-colored clay. An almost black effect can sometimes be produced, especially if the surface is rubbed to close the pores.

BOWLS TYPE F Plate XIV

The two bowls illustrated at the foot of this plate and numbered 19 and 20 are of a type uncommon in the "A" cemetery, for they are the only two that have been found as yet. The first is from burial 12, and is made of somewhat coarse light-red clay. It has a ring base and banded rim. No. 20 is from burial 29. It differs radically from No. 19 in form, but not in color or make. The surfaces of both are rough and striated inside and out, the clay having probably been worked in too dry a condition. Both utensils have very wide mouths, and were probably used for corn or meal.¹

PANS TYPE G Plate XV

Of the three pans figured in this plate, only the first was found in a grave (grave 11). The remaining two, however, resemble the first so closely that they have been included as probably being of the same period. No. 1 was found broken, and only some of the pieces could be recovered. It is impossible to say whether it was originally round or oval in shape. It is roughly made and baked and of a light-red color. The base is flat and uneven, the sides slightly concave. No. 2 is of the same ware. Its rim is produced upwards to form three projections, or lugs, placed at irregular intervals.² No. 3 is of very inferior ware, its surface being irregular both inside and out. In color and texture, however, it resembles the other two. All three pans are hand-made and appear to be of home manufacture. In shape and form they resemble the pans used in Iraq and Syria at the present day to hold flour and dough. Our specimens were probably used for this purpose.

BEAKERS TYPE H Plate XV

This is a rare type of pottery; it was found in only two graves in the cemetery. From their wide mouths and rounded bases, it would appear that these vessels were used for dipping water from a larger jar. No. 4 was found in grave 13 with much other pottery. Nos. 5 and 6 come from grave 28; they were placed together with some other pottery just behind the head. The remaining jar of the group (No. 7) did not come from a burial, but it has been figured, as it is obviously of the same type, though considerably shorter. It was found close to grave 30 and about 2 metres below the surface of the ground. Two small holes for suspension are provided near its rim. The ware is of a light-red color, except in No. 5, which is greenish-gray. This jar is also badly out of shape through over-firing. All the examples are wheel-made, and have rough striated surfaces, both inside and out. The clay is fine and well kneaded. The pottery of this group is thin for its size.

JARS WITH HOLES FOR SUSPENSION TYPE J Plate XV

This type of jar also is uncommon in the "A" cemetery. The close similarity of form of all the examples found would date them to the same period, despite their being found at several different levels.

¹ In grave 36 an infant burial was found buried in a bowl exactly similar to No. 20.

² The Arabs of to-day habitually make the edges of their larger pans irregular. On being asked the reason, their invariable answer is, "It is the custom."

No. 14 is mentioned first, as it can be more closely dated than the others. It is of light-red ware with a small, rough, flat base showing the shallow focussed grooving illustrated in Plate XV, A. There are two holes just below the rim of the vessel through which a cord could be passed to hang it up. This jar is one of a group of pottery found with burial 33.

No. 8 is hand-made and of very crude workmanship. It has two irregular small holes for suspension. It is a dingy-white, which seems to be the natural color of the clay, and it has been very well baked. Traces of a dark-colored substance were found at the bottom of the jar, but in too small a quantity for analysis. This vessel has a pronounced cup-like base, in which respect it resembles No. 9. No. 9 is very roughly made of dark-red clay. No. 10 is on the whole well made, and, like No. 11, has a well-defined rim around it at the junction of the shoulder and body. The latter example is, however, very irregular in form. No. 12 is also of a light-red clay. It would appear to have been treated in some way to make it non-porous. Its base is slightly concave. No. 13 was so hard baked as to become almost vitrified. It is roughly made, and on a slow wheel as its base shows focussed scoring. Possibly it is a throw-out owing to bad firing.

Fig. 15 illustrates a quaint jar of a light-yellow color and very roughly made. The base is flat, oval in shape, and shows focussed grooving. The mouth also was oval, but the opposite sides of the rim were pressed together in the middle so as to form two mouths. A hole has been bored through the pressed-in portion of the rim to take a cord.¹

The traces of a black substance in jar 8 perhaps give us a clue to the purpose of these suspended jars. They possibly served to hold a fat or ointment which was sufficiently expensive to cause the jars containing it to be hung up out of the way. All these jars are small enough to permit of a finger being inserted down to the bottom, except No. 15, which, owing to the shape and size of its two mouths, could hardly have been used for anything very viscous. The small size of these jars, and especially of Nos. 10-12, coupled with the roughness of their make and very obvious finger-markings, at first led to the belief that they were made by children to play with. The holes, however, we think, preclude this theory.

All these jars, with the exception of Nos. 13-15, are hand-made.

FLAT-BASED POTTERY TYPE K Plate XV

The pottery included under this title is the type most commonly found in the cemetery. On reference to the plate, it will be seen that it is heavy ware for its size. The base is thick and clumsy, flat, and marked with the scoring illustrated in the plate (A). A specimen of this type of pottery was found in practically every grave, even the poorest. No especial position was allotted to it. In many cases, two examples were found together, as Nos. 27 and 40, 16 and 29. In burial 23 three specimens were found (Nos. 19, 26, and 36). Most

¹ This vessel must have been worked into an oval shape after it had been removed from the wheel.

of these vases are simple in form with plain rims. Nos. 34-36 have more complex rims, especially the last. The squatter examples (Nos. 37 and 38) seem to be stages in degeneration, by which a more dish-like form was reached (Nos. 39 and 40).

It should be noted that the thickness of the lower portion and base in these jars is excessive. From this it would seem that they were in common use, and were made thus to avoid their easily upsetting. In the majority of cases these jars are roughly made, especially outside. No. 17 is exceptionally well finished. They vary from a light straw color to dark red. Some of this pottery was washed over with a thin cream-colored slip, noticeably Nos. 21, 38, 39, and 40. The last three, it will be noted, are the dish-like forms. The pottery figured in the bottom row of the plate is of very much the same type, but in these specimens spouts were made by pulling part of the rim outward. In reality we have here a distinct type; but in other respects these jars so closely resemble the pottery described above that they have not been put in a class by themselves.

No. 41 is yellow in color and very roughly made. Its base shows the usual scoring. Nos. 42 and 46 were found together in burial 23, but they differ considerably, the first being exceedingly roughly made and the second of the usual type. If it were not for the wheel striations and the focussed grooves on its base, No. 42 might be thought to be hand-made. No. 43, like 41, is yellow and roughly made. No. 44 is light red in color; it is badly out of shape through overfiring. It is impossible to say with any certainty for what these jars were used. A spout would hardly have been provided for a water-vessel of this size, and the only alternative is that they were used for milk. A spout of this description would be useful in pouring out the milk after the cream had formed. If heat also was employed to make the cream rise, the thick bases would serve to prevent over-heating.

ROUND AND POINTED BASE POTTERY TYPE L Plate XVI

Although these jars are of many different forms, they fall into one class inasmuch as all their bases are rounded or slightly pointed. Nos. 1-5 are very similar, and of these three come from graves, whereas Nos. 3 and 4, which are obviously of the same date, were found in the debris in the vicinity of the cemetery. These five jars are wheel-made and thin for their size. They are light red in color, but Nos. 2-4 are coated with a thin whitish slip through which the color of the pottery shows in places. The ware is good and on the whole well made, though all the examples show striated surfaces with traces of drag here and there.

Nos. 6-10 are very small jars, thick for their size, of light-red ware and wheel-made. No. 8 alone comes from a grave; the remainder were found lying in the neighborhood of the graves. No. 10 is most interesting, as well as being the best finished vessel of the group. Jar 11 was found in burial 31. It is of light-red ware with a slightly irregular surface coated with a thin cream slip.

Nos. 12-18 are somewhat similar to type E without a base. They all come from recorded graves, except Nos. 14, 15, and 17, but they had no definite position in those graves. Not one of these examples is coated with a slip, and their surfaces are rough and striated, especially No. 18, whose lower portion is marked by shallow finger-grooves.

Both Nos. 14 and 15 are hand-made. They were found together, but removed by the digger before their exact levels were recorded. Of the ornamented examples, Nos. 13 and 19, the former comes from burial 14, and is of unusual pattern, its rim and shoulder being decorated with five lines scored with a point. No. 19 comes from burial 11; unfortunately its rim is missing. It is light red in color, and has been twisted in firing. The shoulder is incised with a number of fine lines in groups of three and four. Both these examples are slightly pointed at the base.

CUPS WITH HOLED BASES TYPE M Plate XVI

The jars numbered 20 to 25 inclusive are of a very unusual pattern. Nos. 22-25 come from burial 2; each has a small hole at the edge of body and base, which was bored with a stick when the clay was still wet. The holes range from 5 to 10 mm in diameter. This ware is rough, dragged, and striated. No. 23, from burial 18, is also roughly made. The hole near its base is $8\frac{1}{2}$ mm in diameter. Jars 20 and 21 are of the same type as the foregoing, but have no drainage holes. It is difficult to understand the exact purpose of these jars. They may possibly have served as strainers, being filled with some porous material through which the liquid was filtered. The fact that all the drainage holes were placed between the junction of the base and body is curious. It should be noted that the rounded bases of all these vessels would permit of their being placed in the necks of larger jars.

NARROW-MOUTHED WARE TYPE N Plate XVI

This type of jar differs considerably in form as well as in finish from the rest of the pottery found in the "A" cemetery. Of the six specimens found, only two were in graves, the remainder being scattered about at the eastern end of the cemetery at various levels. No. 26 is of thick, heavy, red ware, the surface of which at one time had been so carefully smoothed that it was almost polished. Unfortunately, it was too badly broken and weathered to be worth keeping. No. 27 came from burial 4, and is of a light-red ware and rather softly baked. No. 28, from burial 5, is light red, and thick and heavy for its size. Its surface also is very smoothly finished.

No. 29 is light yellow with an exceptionally smooth surface, almost polished in places, though it shows slight wheel-striations here and there. It closely resembles No. 30 which is red and coated with a red slip which was polished. This polishing appears to have been done with a smooth instrument, possibly a piece of bone, after the jar had been removed from the wheel. The markings resulting from the polishing are irregular and in short strokes of various widths. The coloring-matter appears to be haematite.

No. 31 is of slightly different form. It is straw-colored, and even now looks almost new. It is wheel-made, with a very smooth face marked only here and there with fine striations.

In Nos. 28-30, we have a most interesting series, which is dated to the period of the "A" cemetery by the finding of No. 28 in burial 5. These jars, though heavy for their size, are exceptionally well finished, and there is no doubt that examples Nos. 26, 27, and 31 belong to the same period, because they also are so well finished. It is impossible to say for what these jars were intended. From the narrowness of their necks it is probable that they held a powder or some other easily-extracted substance. As they are comparatively rare, it is possible that they were imported; in that case their apparently useless weight would certainly protect them from breakage in the event of their having to travel a long distance.

SIMPLE DISHES TYPE O Plate XVI

The pottery dishes shown at the base of this plate are not particularly common in the burials,¹ though they were found in embarrassing quantities on the site itself and in other parts of Kish. They appear to have been the most common form of pottery used, and evidently served to hold food. They vary very little, though some are better made than others; all have a very rough base with characteristic wheel-scoring. The color of the clay varies from light yellow to dark red, according to the degree to which they were fired.

The table given below shows the number of pieces of pottery of the given types that were placed in each grave. Graves 1, 18, and 23, it will be seen, each contained two jars of the handled type, one large and the other small. Why it was thought necessary to put two of these jars in a grave, it is difficult to understand, though it is possible that each grave contained the burial of a small child as well as that of an adult.² In practically every case, both a handled jar and a brazier were found. Wherever only one or the other was found, that is, in burials 1, 8, and 16, the bones had been disturbed, and it is possible that the brazier in the first case and the handled jars in the second and third were removed anciently.

Next to types A and B, type C is that most frequently found. It has occurred in varying numbers in twenty-one burials. In seventeen graves, however, not a single example was found. Type C is closely followed by type K which was found in twenty-one graves. The largest number of jars of this type found in one grave was 3, but they nearly always occur singly or, more rarely, in pairs. Type O was only found in eleven graves, no less than four examples coming from each of burials 3 and 32 and three from burial 27. It is curious that a cup of so simple a form should be comparatively rarely placed in the graves, whereas it is frequently found outside them.

¹ They were found in graves 3, 7, 11, 13, 16, 21, 23, 27, 31, 32, and 36.

² Unless the body of an infant was placed in an urn, it is practically impossible to find traces of its bones owing to their extreme fragility.

Asterisk denotes disturbed burial

[illegible]

The hand-made jar (type J) is the most uncommon. Only one specimen has as yet been discovered in a grave (burial 33). As examples of this type of jar, all of which are illustrated in the plate, have been found outside the graves, it is possible that this particular specimen was accidentally included in the filling of the grave, though it certainly appeared to belong to the burial.

Two rare types (M and N) have each occurred in two graves. They were probably used for some special purpose, hence the infrequency of their occurrence.

III. TOOLS AND WEAPONS

The copper weapons found in the "A" cemetery are mostly rather fragile. In many cases they were beaten out of thin sheet metal, and it seems likely that some were manufactured expressly for funeral equipment, as they are much too thin for actual use. Daggers and knives are a common feature in the cemetery. All the daggers are provided with short tangs, to which handles were fastened by from one to three rivets. It would seem that the majority of these handles were of wood or some other perishable material, as only four have been found, one silver, one wood, and the third calcite (Plate XVII, Nos. 9, 12, 16).¹ Some of the handles were fastened on with bitumen without the aid of rivets (Plates XVII, No. 10; XVIII, Nos. 1-3, 5, 6, 8), and this substance was also used to secure the blade more firmly in the handle in many of the rivetted specimens. As in many cases fragments of fine matting were found adhering to the blades, it appears that the weapons were carefully wrapped up before being placed in the grave. These fragments were preserved only because they were impregnated with copper salts and therefore resisted decay. It is possible that they may once have formed part of the sheath of the weapon. But whether this were so or not, it is certain that the matting around the weapons was not part of the matting in which some of the bodies appear to have been wrapped.

BATTLE-AXES Plates III and XVII

The two battle-axes numbered 1 and 4 in Plate XVII came from graves 20 and 2. A similar axe to No. 4 was found in burial 16, but it was too much damaged to be drawn. No. 1 is made from sheet copper (see also Plate III, No. 3). It was first cut to shape, and then the upper portion was bent over to form a socket for a handle. The end of the loop forming this socket was merely bent against the top of the blade and is still free. Doubtless it was formerly tied down to the blade and handle by a thong. Some rush-like material was found adhering inside the socket, which must have been employed as packing between metal and wood. The striking end of the weapon has a curved edge. Though the axe is so small, it was doubtless a very effective weapon. The metal from which it is cut is 3 mm thick.

No. 4 was found in pieces, but it was possible to restore it sufficiently to draw it (see also Plate III, No. 3). It was cut from sheet metal about 2 mm thick. This weapon could hardly have been intended for actual use, as even the slightest blow would double it up. As in No. 1, the loop for the handle is formed by bending over the upper end of the blade. In its present corroded state, it is not possible to determine whether any attempt was made to weld or solder the turned-over end. The weapon will have to be suitably treated to remove the thick patina before this point can be settled. The striking portion

¹ The design on the handle of No. 16 is illustrated in Plate XVIII, No. 4.

has been beaten to an edge. An axe exactly similar to this one was found in burial 16, but it is in very bad condition.

The position of the axe could be recorded only in burial 20, as this grave alone was undisturbed. It was found with a copper dagger under the pelvis of the skeleton, which suggests that the weapons were carried in a belt.¹ The weapon numbered 8 in the plate came from burial 34, which was disturbed anciently. Like the other weapons, it was cut from sheet metal, which was in this case 1 mm thick. It is crescent-shaped with a projecting tang in the middle and at either end. This blade was originally backed with wood, which projected to form a long handle. It exactly resembles the axe held in the left hand of the Sumerian king in an inlaid plaque, which was found at a lower level (Plate III, No. 7). On comparing the two, it will be seen that the blade was lashed to the handle in three places.²

The curious implements shown in Plate XVII (Nos. 2, 3, 5, and 6) were found in burials 2 and 16. Their purpose is difficult to explain. Nos. 2 and 3 were found together, and evidently form a pair. They were in a disturbed grave, from which all the bones had disappeared except those of the feet, close to which they were lying together with other objects; but whether this was their original position it is impossible to say. Each is cut from a flat piece of copper. In neither is there any trace of an edge (see also Plate III, No. 1). Nos. 5 and 6, found in grave 16, are not quite so curved (see also Plate III, No. 2). This burial also was disturbed, the bones of two, if not three, bodies being mingled together in great confusion.³ The articles in question were found near one of the skulls, and No. 6 was wrapped round the mouth of a jar in such a way that it must have been in a soft or springy state when placed in the grave, so that it was bent by the pressure of the earth.

It will be seen that both have bluntly pointed ends and taper gradually to what must have been the handle. This end is roughly notched as if to take the thong which fastened on the handle. There is no trace of an edge and, like Nos. 2 and 3, these two examples were cut from a flat piece of beaten copper, 2 mm thick. These four copper implements resemble sickle-blades in shape. If used for this purpose, they must have been backed by long pieces of bone or wood. But the absence of any edge, or even teeth, I think, removes this possibility, especially when coupled with the fact that sickles in pairs would hardly have been placed in graves. The two burials from which they came also contained battle-axes, showing that their occupants were of the male sex, though it is possible that in the double burial 16 the second occupant may have been a woman and that these copper implements were her property. Burial 2, however, proves that objects of this nature were also buried with men.⁴

¹ For the dagger, see Plate XVII, No. 11.

² A very similar weapon, but thicker and made of cast metal was used in Egypt in the twelfth dynasty. The specimen from Kish is of very primitive make. See also Plate III, No. 6.

³ No evidence as to the sex of the bodies found in grave 16 could be obtained owing to the broken condition of the bones.

⁴ There is a certain resemblance between these objects and an implement carried by a man on a piece of shell carving in the Louvre, which would imply that we have here some form of battle-axe. If this be so, each blade would have required a very heavy backing which would not have permitted much of the edge to project. See the Louvre Catalogue, p. 389, and HANDCOCK, *Mesopotamian Archaeology*, p. 310, Fig. 78.

These objects also remotely resemble a curious wand held in the right hand of a female figure carved in mother-of-pearl, which formed part of a series of inlaid figures found in the same mound as the graves, but at a lower level. It is possible that these objects were used in dancing. A third suggestion is that, like the strigil of the Romans, they were used to scrape the body. They are well adapted by their shape for this purpose.

DAGGERS AND KNIVES Plates II, III, XVII-XVIII

The finest dagger found in the cemetery, though not the best preserved, is illustrated in Plate XVII, No. 9. In this weapon we have the very unusual feature of a slightly-curved blade. The handle is of wood covered over with a thin plate of silver which is folded round it and joined down the side. Three copper rivets fasten the handle to the tang. It is probable that a boss once finished off the handle, and that, as no trace of it was found, it was made of wood. The blade and tang are together 210 mm long; the blade alone measures 145 mm. Owing to extreme corrosion, it has not yet been found possible to measure the thickness of the metal accurately, but in its thickest part it appears to be about 3 mm. This dagger was found in burial 16, in which there was more than one skeleton; but, as the grave had been disturbed, its exact position with regard to the body could not be ascertained. This weapon shows a high level of craftsmanship (see also Plate III, No. 4).

No. 10 was cut from a flat piece of copper. There are no signs of rivets, but the flat tang was fixed in the missing handle with bitumen (see also Plate III, No. 6, second weapon down). The metal is in an excellent state of preservation, but is very thin, averaging only 1 mm in thickness. It comes from burial 34, which was in a badly disturbed state. No. 11 is also cut from sheet metal, 3 mm thick, and is in fair condition. It has a short tang with rounded top which was fastened to the handle by means of a single rivet. This object was found lying under the pelvis in burial 20 in company with the axe illustrated in the same plate (No. 1).

No. 12 is more substantially made. It is 3.5 mm thick in the middle and gradually thins out toward its edges. As it has been shaped by hammering, it is in a good state of preservation. The remains of a wooden handle were found adhering to its three rivets. It comes from burial 14, but its exact position could not be determined, as the grave had been disturbed.

No. 13 was found in burial 28 close to the pelvis. It is in excellent condition, and is 2.5 mm thick in the middle. To give additional strength, there is a vein 2 mm wide down the middle of either side of the blade. This is the only specimen from the cemetery which has this feature. The handle could not be found, but it was originally fastened to the tang by two rivets (see also Plate III, No. 5).

No. 14 is well preserved. It was lying on the pelvis in burial 33. Its thickness in the middle is 2.5 mm. The tang shows traces of the bitumen, which was used to fasten on the handle in addition to the two rivets. In No. 15 the

blade is thickened down the middle for additional strength. It is 3.5 mm thick in this region. It comes from a disturbed burial (No. 14) and, moreover, was found broken. The upper part of the tang is missing; it probably held a second rivet.

In burial 4 there were no bones, but a dagger (No. 16) was found beneath a group of badly broken pottery. The weapon is just over 1 mm thick, and was cut from sheet copper. The top of the tang is missing, and may have had another rivet. What appears to have been the handle was found in close vicinity,—a short piece of calcite which at first sight resembles a cylinder seal. Owing to the action of salt, this handle has cracked and become irregular in shape. The design on the handle was a simple one of incised lines in parallel groups of three, crossing one another to form a series of lozenges (Plate XVIII, No. 4). No. 7 in Plate XVII comes from burial 7, where it was found just in front of the face. It seems to be a small knife or razor. The top of the blade is missing. As the blade and tang together are only 40 mm long, it is possible that this article was once contained in a toilet-case similar to those shown in Plate XVIII, Nos. 22 and 23.

No. 1 in Plate XVIII is a dagger of thin metal, less than 2 mm thick. It does not appear to have been rivetted to the handle; but this is not certain, as the upper part of the tang is missing. There are traces of bitumen adhering to the tang. This weapon was found close to the knees in burial 8. In Nos. 2, 3, 5, and 6 we have a different type of article that resembles a knife rather than a dagger. They are peculiar in that they possess long, thin tangs which were inserted into handles without rivetting. Their size precludes them from being weapons of offence or defence and places them in the category of household articles. In some respects they resemble spear-heads, but their extreme thinness would have made them useless for this purpose.

No. 2 was found in burial 5 beneath a jar in front of the face. There is a round tang, and the blade is but a little over 1 mm thick. It was beaten out of a piece of copper wire, of which the tang represents the original diameter. It has been badly bent through pressure. No. 3 was found close to and behind the head in burial 23. From the objects found in this grave it seems to have been that of a woman. The knife blade is beaten from wire of the diameter of the tang (see also Plate II, No. 16). No. 5 comes from burial 34, but its position could not be ascertained. The blade is .5 mm thick (see Plate III, No. 6, third weapon from the top). No. 6 was found in perfect condition beneath a group of pottery in burial 4. It is well made, but thin for its size, being not over 1 mm thick (Plate II, No. 13).

RAZORS (?) AND ADZES Plate XVIII

The objects shown in Plate XVIII (Nos. 7-13) all have a cutting edge at one end, the other end being either turned over at right angles or neatly rounded off. They were probably used as razors or to cut skins or clothing. No. 7 is a thin, flat blade, 2 mm thick at the top, flat in section, and tapering

gently to a cutting edge which shows signs of much use. It came from burial 23, and was lying close to the pelvis of the skeleton (Plate II, No. 21).

No. 8 is 2.5 mm thick with an edge at its wider end. From its thickness, coupled with the fact that its upper end is slightly notched, it is possible that this object is an adze-blade. It is well made and shaped, but has been anciently broken at one corner of the edge. It was found just behind the head in burial 33 (see also Plate II, No. 19). Nos. 9 and 10 are of the same type. The former was found in burial 5 lying with other copper objects under some pottery in front of the face. It is made from a piece of thick, flat wire, which was hammered into shape, leaving a slight ridge down the middle. There is a fine edge at its broader end, and the upper portion has been turned over at right angles. The thickness in the middle of the blade averages 2 mm (see also Plate II, No. 20). No. 10 was found with a knife close to and in front of the right knee of the body in burial 8.

No. 11 is flat in section and 5 mm thick at its upper end. The edge is chisel-shaped, but the butt shows no signs of having been hammered. This again is probably an adze-blade. It was found on the eastern side of the "A" cemetery about one metre below the surface of the ground (see also Plate II, No. 18). No. 12, from burial 4, was found under a group of jars. It is almost rectangular, of thin metal, only just over 1 mm thick, and has a flat tang 16 mm wide. The edge is at the bottom, and is unfortunately badly broken. No. 13 was not found in a burial, but lay beneath a wall provisionally dated to the period of Dungi. It averages 2.5 mm in thickness, and has the usual cutting edge.¹

CHISELS Plate XVIII

The three chisels numbered 13a, 14, and 15 are well made, in fact Nos. 13a and 15 still look quite serviceable. No. 13a was found in burial 5 under a jar in front of the face. No. 14 was recovered from just below the surface of the ground on the east side of the mound; No. 15 from burial 19, where it was lying close to the right hand of the skeleton. No. 13a is 142 mm long and 4 mm square. Nos. 14 and 15 are respectively 10 x 7 mm and 9 x 4 mm in cross section.

SAW OR SICKLE BLADE Plate XVIII

The object numbered 16 is most interesting and might be either a saw or a portion of a sickle-blade. It is a thin blade, only 1.5 mm thick, the lower end of which looks as if it had been anciently broken away; but until the patina has been removed it is impossible to determine whether this is actually so. One edge of the blade is irregularly serrated. The teeth which average 1 mm in length were cut with a sharp instrument. Though found lying by itself in rough debris near a group of graves, this implement has been included in this report, because it is possible that it came from a disturbed grave.

¹ This tool is, of course, of earlier date than the time of Dungi.

IV. HOUSEHOLD AND TOILET ARTICLES

SPINDLES Plate XVIII

The spindle numbered 17 in this plate is the only one that has been found in the "A" cemetery up to the present. It lay in front of and at some distance from the face of burial 21. The metal portion is a copper rod, now 123 mm long and 3 mm in diameter. Unfortunately, the top of the rod is corroded away. The lower end is square in section immediately below the whorl, and terminates in a simple hook. The whorl is hemispherical in shape and made of a porous, white paste which was formerly glazed. It still shows a faint green tint which may once have been blue. It is 25.5 mm in diameter and 11 mm deep (see also Plate III, No. 5). The two whorls numbered 18 and 19 in the same plate must have come from similar spindles. They were found just below the surface of the south slope of the cemetery mound, and had possibly been washed out of neighboring burials.

No. 18 is made of shell, and is cone-shaped. It is 20 mm in diameter at the base and 14 mm high, and is ornamented with four triangles incised in the shell. A small piece of lapis lazuli was formerly inset in a small round depression in the centre of each triangle. No. 19 is very similar to No. 18, and measures 22 mm in diameter and 9 mm in height. It also is made of shell, but is not so well preserved; it is somewhat powdery owing to the action of salt. The design upon it consists of three triangles, the spaces between which are halved across, and in the middle of each triangle a depression remains in which lapis lazuli was once inlaid. Both these whorls were cut from the apex of a shell; their bases show the arrangement of its convolutions.¹

The objects numbered 20 and 21 come from grave 34, which was pillaged anciently; its contents were in great confusion. No. 21 is a fragment of a handle made of glazed pottery, formerly blue in color, but now light green. It is possible that it belonged to the knife numbered 5 in the same plate. The long handle (No. 21), however, does not fit any of the copper objects found in grave 34. It is now 127 mm long by 19 mm in diameter at its widest part and 14 mm at its narrowest. It is made of a porous, white paste. The color of the glaze has long since disappeared, but there is a slight trace of green here and there. A shallow spiral groove 5 mm wide has been cut in the paste to take a black substance resembling bitumen, which was smoothed off flush with the surface. This latter must have been run in after the glazing was done, as its melting-point is very much lower. A small hole was pierced at 78 mm from the rounded top of the handle, presumably for a cord. The handle is entirely hand-made, and is slightly irregular in shape (see also Plate III, No. 6). An exactly similar handle was found in minute pieces in the same grave.

¹ A similar whorl to these two was found in burial 23, but in too bad a state to be drawn. It was 19.5 mm in diameter and 10 mm in height. No trace of its spindle could be found.

TOILET CASES Plate III, No. 6; Plate XVIII, Nos. 22 and 23

Nos. 22 and 23 are toilet sets which both came from grave 34. The second and better preserved specimen is a cone-shaped case made of sheet copper with the edges slightly overlapped. It measures 15 mm in diameter at the open mouth and is 72 mm long. The point of the case is ornamented by a thin band of silver 3 mm wide, and a similar band seems to have ornamented the top of the case 8 mm from the edge, as the impression of it still remains, and there is a small rivet hole on either side. The case contains three small copper instruments on a copper ring. But, owing to corrosion, they have stuck to each other and to the case, and proper treatment will be necessary before they can be removed for examination. No. 22 is not at all well preserved, and the point of the case is missing. It is made in exactly the same way as No. 23, but has no silver bands.

A third toilet-case was found in grave 16, but so badly broken that it could not be drawn. It was possible, however, to examine its contents, which were found to be two small, pointed rods and a thin, blade-like piece of metal. It is difficult to avoid concluding that even in those far-off days the belles of Sumer manicured their hands.

HAIR ORNAMENTS Plate XIX

The number of hair-pins worn by the Sumerian women of the period of the "A" cemetery varied between one and three. In graves 8, 9, 13, 16, 21, 23, and 24, two were found; and from each of graves 12 and 15 no less than three were taken. The number of these pins that were worn, in conjunction with their very considerable weight, would indicate that the coiffure of the period was elaborate. It perhaps resembled that of the women of the Far East at the present day. Only the pins with coiled heads (Plate XIX, Nos. 5-8) were found in male as well as in female burials (graves 4, 14, 31, and 33), and it is probable that this type of pin was used as a tool rather than as a hair-pin. One pin of this type, however, came from grave 15, which also contained pins that were obviously intended for the hair. It would seem that hair-pins were worn as such only by women.

The four pins (Nos. 1-4 in Plate XIX) are made of copper. They are flattened in the middle, and the top is bent over at right angles. They appear to be hair ornaments, for they were all found close to the head. No. 2, however, is of some weight and length, and must have been a cumbersome object to wear in the hair. The flattened central portion of the pin was possibly contrived to prevent the pin from twisting round in the hair. This portion is ornamented in two of the pins, and when the remainder of the pins have been properly cleaned, it is possible that they also will be found to be similarly ornamented. In Nos. 3 and 4 a small hole was bored through this portion of the pin. There is a similar hole in most of the other types of pins, intended, it would seem, to take a small metal ring, as shown in the broken pin numbered 26. This ring, however, seems to have been easily lost, as only the

one example has been found. It was probably intended that a strand of hair should be passed through the ring to prevent the pin from slipping from the head. In all, seven pins of this type were found in the "A" cemetery.

No. 1 was found with No. 14 lying in front of the neck in burial 12. It is 180 mm long. The curved head was ornamented with a disk-shaped carnelian bead, the tip of the pin being filed to receive the head and burred over slightly to hold it in place. There is a simple design incised on the flattened portion of the pin (see also Plate II, No. 10).

No. 2 is by far the biggest specimen found so far; it is 267 mm long. Its head is hemispherical and made of white paste with fluted sides (probably at one time glazed). A thin silver plate partially covers the top of the head, and the whole effect is that of a conventional flower. The pin itself is square in section immediately behind its head, then flattens out lozenge-shape in the middle, below which it rounds off toward the point. The design, if any, on the flattened portion is until treatment entirely concealed by patina. This pin was found in burial 23 lying close to and at the back of the head.

No. 3 lay in front of the face in burial 9. It measures 184 mm in length. It is of the same shape as the other pins, except that it has a more pronounced bend at the top, which may, however, be accidental. There is an incised design on one side of the middle portion. The bead is missing from the head of the pin; and, as it could not be found, it is to be surmised that it was of wood and has decayed (see also Plate II, No. 12). A very similar pin to this one was found in grave 15.

No. 4 has no point. The head is ornamented with a lapis-lazuli bead capped by a thin, dome-shaped piece of silver. It was taken from burial 16; but, owing to the disturbed condition of the grave, its exact position could not be noted. A very similar type of pin to No. 3 was found in burial 27. It was unfortunately removed by a digger before its exact position could be recorded. It measured 132 mm in length, and the head was ornamented with a large, white bead which crumbled to powder directly it was lifted. The middle portion appears to have a pattern incised upon it, but it is at present hidden by the patina. Grave 34 also contained a pin of this type, but in fragments owing to the burial having been disturbed. It appears to have been cut out of a piece of sheet metal, and a round paste bead was found in a powdery condition close to its tip.

PINS WITH COILED HEADS Plates IV and XIX

A very simple form of hair ornament was made by slightly flattening one end of a copper rod and coiling it to form a head. Only six specimens of this type have been found, four of which are shown as Nos. 5, 6, 7 and 8 in Plate XIX. Not one of these pins is perforated with the hole so common in the other types, but perhaps no ring was needed owing to the small size of the pin. The position of the two first specimens illustrated could not be noted, as they were found in graves in which but few vestiges of bones remained. The

third was lying close to and in front of the pelvis, where it may have fallen when the body was placed in the grave. The fourth lay in front of the head.

No. 5 was taken from grave 4. It is 93 mm long, and was made from a copper rod 3.5 mm in diameter. The head of this pin is very slightly coiled so that it forms a small eye. No. 6 from burial 14 is 145 mm long and 6 mm in diameter. Its head has been but slightly flattened, but it is tightly coiled. Two pins of this type were found in this grave. No. 7, found in grave 31, is 100 mm long. Its flattened head is rolled over several times to form a whorl (see also Plate IV, No. 7). No. 8, from burial 15, is made from copper wire 4.5 mm in diameter. The head has been beaten into ribbon form and twisted up into a large tight coil (see also Plate IV, No. 8). A pin of this type from grave 33 measures 147.5 mm in length by 6.5 mm in diameter at the thickest part. Its upper end is slightly flattened and rolled over once. The pins in graves 14 and 33 were both found in what are presumed to have been male burials. They may not, therefore, have been intended for use as hair-pins, but rather as some kind of borer. It must, however, be admitted that the pin in grave 33 lay behind the head. The position of the pin in burial 14 unfortunately could not be determined owing to the bones being disturbed. Serviceable daggers were found in both these graves, which could hardly have belonged to the funeral equipment of a woman.

ANIMAL-HEADED PINS Plates II, IV and XIX

The four pins illustrated by Nos. 12, 13, and 14 are the only ones that were found of their type. Nos. 13 and 14 appear to have been cast, and the design, as far as can be seen until the incrustation has been removed, is a bull's-head. No. 12 is 113 mm long, and the shank is 4.5 mm in diameter just below the head. The latter is formed by first flattening out the rod and then fretting out the horns and ears of an ox from the flattened portion. A rough semblance of the actual head of the animal was ingeniously contrived by bending a strip of metal over between the horns. This pin was found in burial 13 lying in front of the face together with a pin identical with No. 27 (see also Plates II, No. 14, and IV, No. 15). No. 13 was discovered in a building some distance from the cemetery, but it has been included for the sake of comparison. The face appears to be human, but, as it is very incrustated with patina, it will have to be cleaned before this point can be determined. No. 14, from burial 12, was found in front of the neck of the body. It is 200 mm long, with a round shaft tapering to a point. The head appears to be that of an ox with short, curved horns, but this again can only be decided after the removal of the crust that covers it (see also Plate IV, No. 14). A similar pin to No. 13, found in burial 25, was in too corroded a condition to be drawn (Plate IV, No. 13).

SIMPLE HAIR-PINS Plate XIX

The commonest form of pin is a straight rod tapering gently to a point with either a plain, rounded head or topped with a bead of lapis lazuli or glazed paste. The majority of the simpler hair-pins are round in section.

Some, however, are either square (Plate XIX, No. 16), from graves 12 and 15; hexagonal (No. 20), from graves 9 and 32, or octagonal (No. 28), in section below the head, gradually becoming round toward the point, from graves 23 and 24. No. 20 is of a simple type with a plain, slightly flattened head. It is 190 mm long by 9.5 mm in diameter at its upper end, which is hexagonal in section. The pin gradually becomes round as it approaches the point. It was found lying across the neck of the body in grave 32 (see also Plate IV, No. 1). No. 21, whose upper portion is square in section, came from a grave which had been disturbed in ancient times.

No. 22 was found together with No. 5, lying under some small jars in grave 4. It is long and narrow, 3.5 mm in diameter below the head, which is a slight knob or boss measuring 5 mm in diameter. No. 23 came from the temple site beside the ziggurat at Tell Ahaimir. It has been included here, as it is obviously of the same type as the others figured. It was probably brought to the site in the earth which was used to fill the foundations of the later temple. No. 25 lay close to the head of the occupant of grave 18. It is 108 mm long and 4 mm in diameter. The head resembles that of a nail, and is 10 mm in diameter (see also Plate IV, No. 3).

The ringed pin (No. 26) was discovered one metre below the surface on the north side of the cemetery. A copper wire was passed through a hole 16 mm from the top of the pin, and its ends coiled on one another to make the ring. Unfortunately, the point of the pin is missing (see also Plate IV, No. 4). Pins with plain tops are not so frequently found as are those which have, or had, a head made of stone or some other material. As the heads of many pins of the latter type are now missing, it must be concluded either that they were missing when the pins were placed in the grave or that they were made of some material that readily decayed. This last supposition is the more probable. It would account for so many pins now being headless, though the point on which the head was fixed still remains. Nos. 16-19 and 24 all had bead-like heads. The last three came from graves; the first two, from the eastern slopes of the cemetery. No. 16 is square in section at the top, and gradually rounds off toward the point.

No. 17 has a square projection to take the head, but is otherwise round in section. No. 19 lay on the shoulder of burial 5. No. 15 lay together with No. 24 in front of the neck in burial 8. A small lapis-lazuli bead is fitted upon the top of the pin which was thinned to receive it. No. 21 measures 221 mm in length. Its upper portion is square in section, and the hole for the ring is bored through this portion of it. This pin was picked up on the surface of the cemetery mound. The fine specimen numbered 27 is in excellent condition, and measures 230 mm in length and 9.5 mm in diameter below the head. The round lapis-lazuli bead which forms the head is 13 mm in diameter. It lay close to the pelvis of burial 21 (see also Plate IV, No. 9).

No. 28 is a small pin from the pillaged burial 34. It is 151 mm long by 6.5 mm in diameter just below the head. The upper portion is octagonal in

section. The head is of lapis lazuli and somewhat out of shape. It was firmly fastened on by burring over the top of the thinned-out portion on which it was fixed (see also Plate IV, No. 10). A pin which lay some distance from the head in burial 21 was so cracked and swollen by corrosion that it could not be drawn. It measured 233 mm in length, and was surmounted by a round bead of lapis lazuli 16 mm in diameter. The bead is capped above and below by thin dome-shaped pieces of silver which leave but little of the bead to be seen (Plate IV, No. 11). A copper pin from burial 19 was round in section tapering to a point. Its head, 9 mm in diameter, was black in color and might once have been glazed. Its composition is unknown. This head was fastened to the pin by means of a small point on the top of the latter, bitumen being used as an adhesive. A beautiful pin, found in grave 9 close to the pelvis of the body, is 217 mm long by 9 mm in width at its head. It is hexagonal at the top, and gradually becomes rounded as it narrows down. Its six sides are not equal in width, two being 6 mm wide and the remaining four averaging 4.5 mm. The head of the pin was of calcite or paste, and was secured to the metal by bitumen, but it was found in a powdered condition (Plate IV, No. 12).

NEEDLES AND BODKINS Plate XIX

Of the needles or bodkins illustrated in Plate XIX (Nos. 10 and 11), No. 10 does not come from a recorded grave. There is, however, every reason to suppose that it has been washed out of a grave that formerly existed on the side of the cemetery mound. It is 150 mm long. The top has been slightly flattened and perforated to form an eye. The metal around the eye has been slightly grooved lengthways, as in modern needles, to facilitate threading. No. 11 from burial 4 is 192 mm long and 2.5 mm in diameter. This is of a more primitive type than No. 10, as its top has simply been bent over for 11 mm to form a rough eye 7 mm in length. These needles were probably used for leather work. Their points are not very sharp, and on this account a hole would have to be bored first before the needle could be inserted.

METAL BOWLS AND DISHES Plate XX

Metal bowls and dishes are fairly frequently found in the "A" cemetery, showing that this type of utensil was well known and in common use in the period to which the graves belong. As will be seen, these bowls and dishes are simple in form and of somewhat primitive make. Their usual position in the grave was either just in front of the face or immediately behind the head. In grave 21, however, where no less than three bowls were found, one was placed near the feet. In burial 15, the one metal dish was laid close to and in front of the pelvis. Usually, more than one metal dish was placed in a grave; there were two in burial 11, three in burial 21, and four in grave 34. The large number in this last grave is accounted for by the fact that it held more than one body. Three of the metal dishes had handles, as shown in Plate XX; another dish found in burial 23 probably once possessed a handle, as did

No. 12 also. In two burials (Nos. 21 and 23), the right hand rested on a copper dish supported on the left hand, as if to suggest that these dishes were greatly valued. Copper, as is well known, is not a suitable metal for food utensils, as it is readily attacked by acids. This must have been recognized even in early times, and for this reason it is supposed that these bowls and dishes were intended solely for drinking.

Nos. 1 and 8 came from burial 11 which was disturbed, and both were found broken. No. 1 is 116 mm in diameter at the rim and 63 mm in height. No. 8 is a little smaller and deeper and has a flat base. Both are well made and carefully shaped. With these two dishes a piece of repoussé copper (No. 13) was found, whose shape suggests that it is part of the handle of a dish which has disappeared.

Nos. 3, 7, and 9 are an interesting group from burial 21. No. 3 was placed immediately behind the head. It is 116 mm in diameter and 60 mm high; formerly round, it is now very much bent and twisted by the weight of the earth upon it. No. 7 was near where the feet would have been, if undisturbed. Its diameter is 112 mm, and it stands 27 mm high. The base is flat and measures 48 mm across. This specimen was unfortunately broken, and fragments of it are missing. No. 9 is of a more elaborate type. As it is bent, it could only be measured approximately; it averages 143 mm in diameter and 40 mm in height. The handle and bowl are of one piece of metal, the former being a plain strip which is coiled over at the end. It was found in front of the face with the right hand resting upon it and the left hand underneath. It is well made, but bent and cracked; small fragments are missing through corrosion.

Nos. 4, 5, and 6 come from burial 34. Altogether four copper vessels were found in this grave, but the fourth was so badly broken that it could not be drawn. It was of the same type as No. 3. The positions of these bowls could not be recorded, as the grave had been anciently disturbed. No. 4 is 87 mm in diameter and 49 mm high. It is in good condition with only a small piece missing. This bowl was made from thicker metal than the others. No. 5 is a good, simple shape, but in a very corroded state; it measures 89 mm in diameter and 36 mm in height. No. 10 is a rather shallow bowl, 93 mm in diameter and 26 mm deep, with a protruding flat base 46 mm in diameter. It is badly broken. The handle is simple, flat, and in one piece with the bowl. It is 14 mm wide near the bowl and 7 mm wide at the tip.

No. 6 was not found in a grave; it lay 250 cm below the surface of the ground in the southern slope of the cemetery. It is 55 mm high and 97 mm in diameter. It is in perfect condition, but it has been pressed into an oval shape by the weight of earth above it. The ornamental, handled dish numbered 11 is the only one of its kind to be found in the cemetery. It was lying on the mouth of a jar just behind the head in burial 24. Its base is, therefore, exceptionally well preserved, though the upper portion has been cracked and distorted by uneven pressure. It measures 136 mm in diameter and 36 mm in height. The base is slightly convex, but this is possibly due to its having

been unsupported. The upper portion of the bowl is ornamented with shallow fluting, whose convexity is inside and not outside, as in modern practice, showing that it was worked from the outside. This dish is well made and shows an advanced stage of craftsmanship.

No. 12 is unique in shape. It was taken from burial 2, which unfortunately had been badly disturbed anciently. Its dimensions are approximately 154 mm in length and 96 mm in width. The base and rim of the dish are rectangular, and the base is practically flat. The sides slope quickly outward, and the corners are rounded. There was at one time a flat handle at one end of the dish, but this could not be found in the grave. Three other bowls were found in different graves, which were in too dilapidated a state to be drawn. The first, from grave 12, lay with some copper hair ornaments in front of the neck. It was of the usual simple shape and very similar to No. 6. The second, in grave 23, had a handle similar to that of No. 10. The third measured 102 mm in diameter and 50 mm in height; it was found in burial 15.

The small bowl numbered 2 is made of lead. It measures roughly 75 mm in diameter at the rim and 52 mm in depth. Its base is flat and projects slightly below the rest of the bowl. The metal is in an excellent state of preservation, though it has been holed in several places anciently. It was found in grave 12 just behind the neck. A very similar lead bowl, but not in such a good condition, was found in burial 9, where it lay behind the head and beneath the cup-shaped base of a jar. Owing to its being very much dented, this dish could not be drawn. It would seem to have measured roughly 40 mm in height and 74 mm in diameter.

The use of lead for cups is somewhat surprising, as it would be thought that this metal would not have stood even gentle usage. Yet the pure metal was used, unmixed with any hardening alloy. This fact is proved by the ease with which a lead cup which was found very much flattened was bent back to its original shape. Both the lead bowls described above were thickly coated with a yellow oxide, which readily scales off, showing the metal beneath.

The usual thickness of these metal bowls was from 1.5 mm to 2 mm at the rim and 0.5 mm at the base. The thickness of the rim is the original thickness of the sheet copper from which the bowl was made. It is usual, even at the present day, to leave the rim of a hammered vessel as far as possible untouched and to beat toward the centre of the plate, so that the rim shall have as much substance as possible to stiffen it.

V. PERSONAL ORNAMENTS

JEWELLERY Plates IV and XX

The most noteworthy piece of jewellery found in the graves in the "A" cemetery was a round piece of silver with a simple embossed design. Specimens were found in five graves out of a total of thirty-eight excavated. This proportion shows that this type of ornament was very frequently worn, especially as many of the graves must have contained male burials, and others had been rifled. All these medallions, as will be seen from Plate IV, resemble one another very closely. The Sumerian silversmith seems to have resembled his colleagues of the present day in the Near East who, conservative to a degree, limit themselves to a very few designs. Another possible reason for this want of originality is that these objects may have been regarded as amulets. The central motive of the design may possibly represent the sun with its rays. The position in which this form of ornament was worn appears to have varied. The position of four of the specimens was recorded; the fifth example was found in a disturbed grave (No. 16). Of the four, two were lying in front of the neck, one close to the breast, and the fourth near the pelvis. We may, therefore, infer that these bosses were generally worn on the breast and in some cases at the waist.

The fact that these medallions were sewn to the clothing is proved by the presence of a row of five or six holes on either side close to the edge. These holes are all roughly pierced, and evidently made with a sharp point and not drilled. From this fact it is evident that the ornament could not be accidentally displaced in carrying the body to the grave or in placing it in position. It must, therefore, have been worn in different positions according to the fancy of the wearer. Only two of these pieces of jewellery were in a fair state of preservation. Silver is attacked by salt more readily than copper, and some of the specimens fell to pieces when being removed from the damp soil. Four were cut from very thin silver plate, averaging 1 mm in thickness. The design is repoussé from the inside, and is made up of a central round boss surrounded by one or more rings in relief. In two of the ornaments the spaces are filled in with radial lines made from the outside with a chisel-edged punch. Owing to the thinness of the metal, the edge was in some cases rolled over slightly to strengthen the medallion. This was somewhat roughly done.

From the objects found in the graves with these medallions, we must conclude that this form of ornament was worn by women only. One specimen (Nos. 18 and 20 are two photographs of the same object) was found in a child's grave (No. 10) in front of the neck. It is 43 mm in diameter and 1 mm thick, and its design is as described above, the outer of the two raised rings forming the edge of the ornament.

No. 21, from burial 23, was originally 55 mm in diameter and very thin with a flat, unrolled edge. It is unfortunately in a deplorable state owing to corrosion. The design is quite simple with a large raised boss in the centre, 23 mm wide, and two rings in relief. It lay close to and in front of the neck.

No. 22 came from the disturbed burial (No. 16). It is very similar to No. 21, except that its boss is larger, and there are three rings around it instead of two. It measures 46 mm in diameter.

A medallion taken from burial 32, where it was found close to and in front of the pelvis, is 48 mm in diameter, and the small boss in the centre measures 14 mm in diameter. Its edge has been turned over to strengthen it.

The best-made specimen (No. 23) came from burial 21, where it was found lying close to the breast. It is 50.5 mm in diameter and 3.5 mm in thickness at the edge. The boss is made of a shallow, dome-shaped piece of silver, 20 mm in diameter and 9 mm in height, including the plate, to which it is apparently soldered. The central boss is surrounded by three circles in relief, and the ornament is chased both back and front with fine lines radiating outward.

FILLETS

A piece of jewellery which was unique in this cemetery is a silver fillet worn by the occupant of grave 21. It is a long, narrow band, still with a certain amount of spring about it; it measures 170 mm in length, 11.5 mm in width, and 1 mm in thickness. It was adhering to the skull, lying horizontally across the forehead. Either for ornamentation or to stiffen it, both sides of the band were pricked all the way along about 5 mm from the edge. This was done with a pointed instrument, but without actually perforating the fillet. Both ends of the ornament are rounded, and there is nothing to show how it was fastened to the head. It was probably secured in the hair on either side of the face (Plate IV, No. 24).¹

EAR-RINGS Plates IV and XX

Ear-rings, both of silver and copper, were frequently found in the cemetery. They were worn by both sexes and, as a rule, in both ears. In burials 19 and 21 two ear-rings were found in the right ear and one in the left; and in burial 9 there were two in the right ear and none in the left. The two rings in the right ear of burial 19 were one of silver, one of copper. Children also wore ear-rings, but always made of copper. A shell ring which lay in front of the face in burial 23 may possibly have been worn in the nose. It measures 19 mm in outside diameter and 8 mm inside diameter; it is cut from a round piece of shell. The ear-rings found fall into three groups:—first, plain wire, as No. 19 in Plate IV, and No. 17 in Plate XX; second, coiled wire, as Nos. 16-17 in Plate IV, and No. 18 in Plate XX. Lastly, a small type with the wire flattened at the ends, as Nos. 15 and 16 in Plate XX. Many of the coiled rings do not

¹ Compare this fillet with a similar ornament worn in the hair on the alabaster head of a Sumerian woman of early date (DE SARZEC and HEUZÉY, *Découvertes en Chaldée*, Plate VI, Fig. 3).

match; that is, large rings were worn in one ear, and small ones in the other, but the rings of this type were very likely manufactured at home. The rings of the type of Nos. 15 and 16 in Plate XX were, however, probably made by a silversmith; they were always worn in pairs. The silver and copper wire used for making ear-rings varied from 2 to 3 mm in diameter. No soldering was ever done, the ear-rings being prevented from falling off by the simple expedient of overlapping the wire.

BRACELETS Plate XX, Nos. 14 and 14a

Bracelets were not often worn. They have been found in only six graves (Nos. 10, 16, 21, 23, 30, and 34), three of which were those of children or young persons. The bracelet numbered 14 is of copper and flat in section with rounded edges. Its width is 5 mm, and it is 2.5 mm thick. Two of these bracelets were found on the left wrist, and one on the right in burial 30. The two bracelets from grave 10 are made of round silver wire, 5.5 mm in diameter, with the ends slightly overlapping. Judging from their small size, 44 mm in diameter, they must have belonged to a child. In burial 21 there was a silver bracelet on the right wrist, made of a tape-like piece of silver similar to the silver fillet found with this body, but without the pricking along its edges. A similar bangle, 8 mm in width, was found on the left arm of the occupant of grave 23. Both these bracelets were in a deplorable state of preservation.

In burial 34 there was one bracelet (Plate XX, No. 14a) of copper wire about 4 mm in diameter and slightly oval in section. The ends of the wire overlap, and the diameter of the bracelet which is badly bent averages about 68 mm. A carnelian bead of cylindrical form, 9 mm long and 8 mm in diameter, which was found close to the left wrist of burial 21, was possibly worn on a bracelet of cord.

FINGER-RINGS

Finger-rings were exceedingly rare in the "A" cemetery. They have been found in only one grave (No. 23), where the right hand which rested upon a copper dish had rings upon the third and fourth fingers. They were found adhering to the phalanges, and were in a deplorable condition. Each ring was 8 mm broad. A plain, flat silver bangle on the left arm, also in bad condition, was the replica of the rings, though, of course, larger in diameter.

BEADS Plates IV and VII

Beads were found in considerable quantities in the "A" cemetery. They occurred in twenty-four graves out of the thirty-eight excavated, ranging in number from a single one to a long string. They were worn by both sexes. In view of the fact that several graves contained beads which were originally glazed, but had become extremely fragile and the same color as the soil through the action of salt, we may perhaps assume that glazed beads were placed in most or all of the burials. The materials most commonly used for the manufacture of beads, apart from glaze, were carnelian and lapis lazuli. Beads made of these

stones occurred in practically every necklace, lapis-lazuli beads being especially plentiful. Silver beads were also fairly popular, they were found in graves 3, 4, 14, and 21. More rarely used stones were limestone (graves 10 and 13), rock-crystal (grave 23), jasper (grave 27), serpentine (grave 15), and two stones, gray and black respectively, which have not yet been identified (graves 1 and 13). Only one specimen was found of each of the five last-mentioned stones. Only one shell bead was found (grave 28). It appears to be the shell of a species of *Dentalium*, and is 9 mm long. A number of similar shells were found close to the "A" cemetery, and had apparently also been used as beads.

The beads of the "A" cemetery can be classified by their shape into seven groups:—

- (1) Disk-shaped beads with either flat or slightly rounded surfaces (Plate VII, No. 17).
- (2) Squat barrel-shaped beads, occasionally slightly faceted (Plate VII, Nos. 1, 12, and 19).
- (3) Long barrel-shaped beads (Plate VII, Nos. 10 and 21).
- (4) Long or short cylindrical beads (Plate VII, Nos. 3, 5, 14, and 20).
- (5) Squared beads, long or short.
- (6) Globular beads.
- (7) Ornamented beads.

(1) The disk-shaped beads were one of the commonest shapes. They form a large portion of the necklace illustrated in Plate IV, No. 28. These beads vary considerably in quality, and may be either highly or semi-polished in the same necklace. The rougher beads may be of earlier date, and have been re-used. Their holes for threading also vary greatly, ranging from one that will hardly admit a fine needle to one that is two or three millimetres in diameter. The process of manufacture seems to have been as follows: The bead was first roughly chipped into the shape of a round, flat disk, and then drilled. Several were then strung on a cord and rolled to and fro on some abrasive material, which roughly polished their faces, and in the case of the larger beads produced a slightly rounded surface.¹

(2) A sideways motion during this process produced two facets separated by a ridge in the middle of the bead, so that it took a squat barrel shape (Plate VII, No. 19).² This method of polishing and shaping beads served at the same time to smooth the interiors of their holes. The same process was employed in making the beads of groups (2) and (3).

(3) Owing to their length, beads of this group revolved more evenly on the cord; hence their lateral faces curved more gently, and the central ridge characteristic of groups (1) and (2) is absent. It is, of course, possible that each of the longer barrel-shaped cylinder beads was rolled separately. The thinner disk-shaped beads were only made in carnelian and rock-crystal.³ The

¹ This method of making the disk-shaped bead was practised in ancient Egypt from the earliest times. There is little or no difference between beads of this type from that country and the specimens found in the "A" cemetery.

² The amount of sideways motion depended entirely on how the beads were strung, whether tightly or loosely.

³ One rock-crystal bead was found in burial 23.

thicker beads with a central ridge occur in carnelian, lapis lazuli, and occasionally in glaze, the latter always hand-made, but obviously in imitation of the shape of the stone beads. The more roughly finished, disk-shaped carnelian beads are, as a rule, of a brownish-red color and semi-opaque. The better-finished beads are deep red in color and nearly transparent.

(4) The cylindrical beads, whether short or long, are usually of glaze, carnelian, or lapis lazuli. The glazed beads are of the rod-like form that is so common in Egypt from early to very late times. These glazed cylindrical beads seem to have been made by dipping a thin rod or cord into a white paste, which is probably gypsum, or a composition of ash. The foundation was then burnt away, leaving a long, hollow rod of the paste. This rod was broken up into sections of the required length which were then glazed. The rod was obviously not glazed entire, unless two coats of glaze were applied, for the ends of the beads were glazed as well as the sides.

(5) The squared beads are always of lapis lazuli. Specimens were found with other beads in graves 1, 3, and 22. They were cut—presumably with a saw—from blocks of lapis lazuli, and then rubbed smooth, during which process their edges became slightly rounded.

(6) Globular beads are somewhat rare. They were usually made of lapis lazuli. They have been found with other beads in graves 1, 2, 5, 8, 10, 21, 22, and 28. Those taken from grave 10 are of limestone and lapis lazuli; those from grave 28, of glaze. The boring of a bead was done from either end, even in the thinner specimens, with the result that the diameter of the middle of the hole was often so small as to make it difficult to thread the bead. The larger beads are beautifully drilled, the holes in most beads meeting accurately in the middle. The drilling was probably done with emery powder and a thin copper rod. In each of burials 14, 20, 32, 34, and 36, one solitary bead was found which had been worn on a string around the neck. The occupants of the first two burials were males, the third was female, the fourth grave contained two bodies, a male and female, and the last was the burial of a child. The beads in burials 14, 32, 34, and 36 were barrel-shaped and made either of silver, glazed paste, or carnelian. As mentioned before, carnelian beads were quite the most popular, followed by lapis lazuli. Carnelian beads were, as a rule, highly polished, except in the case of some disk-shaped beads. For some reason, which it is not easy to explain, the Sumerians seem to have experienced great difficulty in working lapis lazuli, even though it is softer than carnelian.¹ Their lapis-lazuli beads all show a certain amount of apparently unintentional facetting, and are rarely true in shape. They look as if they had been first roughly sawn into shape, and, as suggested in the introduction to this paper, the two stones may not have been worked by the same people. The lapis-lazuli beads found in the "A" cemetery are mostly of the truncated double-cone type, as represented in Plate VII, Nos. 12 and 19, or they are barrel-shaped as No. 10 in Plate VII.

¹ The hardness of carnelian is 7, that of lapis lazuli 5.5.

(7) A very unusual type of bead was found in a necklace from grave 21 (Plates IV, No. 27 and VII, Nos. 9 and 11). The first flat, lozenge-shaped bead on the necklace is made from thin silver plate, but exactly how, it is difficult to make out, owing to the incrustation of patina. It appears to have been made from a thin piece of silver which was doubled and then folded over along the three open sides. The hole for the cord was probably made by embossing the plate down the middle of each half, so that the two grooves came together.

The bead which matches it in shape is of carnelian; its edges are rounded, and the hole is well cut. Another unusual bead is figured in Plates IV, No. 31 and VII, No. 7. It is 45 mm long, and was found by itself in grave 20. It is made of porous paste which seems to have been glazed. What the original color of the glaze was, it is difficult to determine; it is now quite a dark brown. The bead consists of two globular portions, which are fluted in the direction of the general axis, joined together by a bar, 15.5 mm long, decorated with seven annulations. Both ends are broken, and the bead may once have been considerably longer with a repetition of the globular portions. It is, of course, possible that it may have been part of some kind of fillet or necklace, but no trace was found of any other portion of it.

The cylindrical bead shown in Plates IV, No. 32 and VII, No. 21 came from burial 14, where it was the only bead found. It is of silver, and both ends are slightly damaged. It now measures 42 mm in length and 8 mm in diameter in the middle. The covering of patina makes it impossible to determine how its edges were joined, whether by lapping over or soldering.

Bead 33, in Plate IV, was the only specimen found in burial 32. It is made of a white paste, originally glazed, and its surface is now much blackened. It is decorated with incised parallel lines running round the bead at right angles to its long axis, as well as along its axis so as to form a series of minute squares. The limestone bead shown in Plate VII, No. 13 was found with two other beads in burial 13. It is 25 mm long, by 16 mm wide, 7.5 mm thick, and is decorated with incised lines. The small holes formerly held pieces of lapis lazuli. Bead 8 in Plate VII is also very unusual. It is made of sheet silver with silver rings soldered on either end. It was found in burial 21 together with the flat, lozenge-shaped beads of silver and carnelian described above.

A very curious, bright red carnelian bead was found in a necklace from burial 23 (Plate V, Nos. 25 and 30). It is 15 mm long by 5 mm in width and 4 mm in thickness in the middle; it is rectangular in shape when viewed from front or back, oval when viewed from the side. The front and back are smoothly polished, but the sides show signs of the original flaking. Both front and back are ornamented with a design of three interlocking circles in white. These circles have been painted on the stone and burnt in in some way. The white substance is extremely hard, and appears to be vitrified. A bead of the same type, measuring 9 mm in length and 8 mm in diameter, was found in a necklace from burial 21. Its highly polished surface is decorated with three lines of white, running zig-zag fashion around the bead.

A very similar bead to the one with the three circles was brought to me early in the season by a boy who said he picked it up on the "A" mound. I unfortunately rejected it, as I thought at the time that it was of modern manufacture. The bright red of some of the carnelian beads found in the "A" cemetery may perhaps be due to roasting, as mentioned in the introduction. In carrying out this process, it is possible that the white substance was by accident found to adhere very closely to the stone, and afterwards this knowledge was utilized for decorative purposes. There is no indication that the design on these ornamented beads was first incised and then filled in with white. The color adheres to the polished faces with extraordinary tenacity, and can only be removed with the point of a needle with very great difficulty.

A lapis-lazuli bead from grave 16 is roughly cut into the form of a frog (Plate IV, No. 26). It was possibly an amulet, and in form, though not in substance, resembles similar beads which are frequently found in Egypt. A long, cylindrical bead of serpentine, 48 mm in length and 9.5 mm in diameter, was found together with some short cylindrical beads of glaze in burial 15. It had the figure of a running antelope engraved upon it. It is possible that in reality we have here a simple form of cylinder seal. The hole through it has been very much enlarged through wear. A curious bead (?) was found with others in burial 19. It is made out of a piece of sheet copper bent round into the form of two tubes side by side, each of which is 23 mm long and 6 mm in diameter. If this object is actually a bead, it may have been a divider for several strings of a necklace. It may equally well have been an ornament for the hair. The latter seems more probable, as copper was apparently never used in the manufacture of beads at the period of the "A" cemetery. Bead No. 2 in Plate VII is of lapis lazuli and decorated with incised lines. As it has two holes, it probably served as a divider in a necklace of more than one string. In burial 27, a small flat pebble was used as a central stone, on either side of which were two disk-shaped beads—three of carnelian and one of jasper.

VI. CYLINDER SEALS

Seals were found in fifteen graves out of the thirty-eight excavated. In each of three burials there were no less than three seals, though only one was a double burial (graves 16, 23, 32). In the undisturbed graves, the seals were usually found in front of the upper part of the body, which suggests that they were worn on a string around the neck. In two burials (Nos. 8 and 23), a seal lay close to the pelvis, and had probably been fastened to a girdle. In grave 32, a seal lay between the hands and the chest; it may have been tied to one of the wrists.¹

Seals are as frequently found in female burials as in those of males. As they were used solely for sealing contracts, conveyances, and other legal documents, this fact would seem to show that the women of the period transacted business on their own account, and for this purpose had their own seals. The presence of three seals in a grave containing only one burial is surprising. Possibly two of these seals had belonged to ancestors of the occupant of the grave, who may himself have been the last of his family.

The favorite material for making seals was shell. Out of a total of thirty-seven, twenty-two are cut in this material. Of the remainder, five seals are of limestone, one of bituminous limestone, four of calcite, two of haematite, one of serpentine, one of lapis lazuli, and one of glazed paste. The use of glaze for cylinder seals is most unusual, and we were fortunate in recovering a specimen from grave 1, though it is in a deplorable condition through the action of salt. Each seal is a practically perfect cylinder with flat ends. In only one case is there any trace of the concavity that is met with in seals of the period following that of our cemetery. This exception is a limestone seal from grave 4, which has a slightly concave lateral surface and flat ends.

In those seals that were made of shell, the size was limited by the size of the shell from which they were cut. The axial portion of a big shell provided enough solid material to make a seal averaging 35.5 mm in length by 17.5 mm in diameter; from a smaller shell a seal measuring 20.5 by 11 mm was cut. That the whole of the axial portion of the shell was utilized is proved by the fact that in a great number of the seals the convolutions of the shell are seen at either end. There is little doubt that all these seals were cut from the same species of shell.

A limestone seal from an unrecorded grave, measuring 30 mm in length by 16 mm in diameter, is especially interesting, because, being only partially made, it shows the method of manufacture. It is a cylindrical piece of stone and unbored. The figure of a man has been roughly cut on one side, and a man's head left unfinished on the other. The workmanship is very rough. The fact that no attempt had been made to bore the usual hole through it indicates that it was customary to do the engraving first. If this were so, it

¹ In Iraq at the present day both seal and purse are worn on a string around the neck.

argues great confidence on the part of the Sumerian in his use of the drill. But it should be noted that in this particular instance the stone is comparatively soft (Plate VI, No. 1).¹

From the rubbed appearance of some of the seals it would appear that they had been much used. But their condition might be accounted for by their being worn hanging loose upon the person. This would also partially account for the holes being wider at the ends; in some cases they were 6 mm in diameter at the ends, whereas the diameter in the middle of the seal was only about 3 mm.

The most popular subjects for the scenes engraved on the cylinder seals are a row of animals walking or running in file or one or two lions attacking flocks defended by herdsmen armed with sticks or bows and arrows. In the latter scenes, the lions are for the most part arranged with their bodies crossing one another. They are always portrayed as seizing the animals attacked by the neck. This argues close observation of nature on the part of the artist, both as regards the lion's method of attack and the fact that these animals generally hunt in pairs. It would seem that the herdsmen of the period to which these seals belong were greatly troubled by lions, though the latter were a smaller variety than the African species.²

The long-horned antelope which appears on these seals was a curious animal to be domesticated, as apparently it was; on a votive tablet found at Nippur an antelope is even shown drawing a plough. It was probably present in Mesopotamia in large herds long before the occupation of that country by the Sumerians. It must have been kept chiefly for its meat; the hair is too short to be utilized for weaving. The presence of these animals coupled with that of the lion would suggest that Mesopotamia at the time was a semi-arid country like parts of South Africa at the present day. The animals portrayed on the seals are all such as would have been suited to a flat, grazing country; for example, the ostriches on the seal shown in No. 4 of Plate VI and the various types of antelope on seals 3, 5, 6, 7, 10, etc. The stag on seal 16 probably came from the better wooded and more hilly country on the northern or eastern borders of Mesopotamia.³

The human-headed (?) bird on seals 7, 8, 10, and 12 resembles the heraldic, eagle-like bird which was the symbol of Lagash, though it is not represented on the seals from Kish as holding a lion with each claw,—with the possible exception of No. 12. The presence of two registers on a seal is rare. And, unfortunately, the two examples shown in Plate VI (Nos. 17 and 18) come from unrecorded graves, though they are certainly of the same period as the other burials. In both, the subjects portrayed are complex and out of the ordinary,

¹ Another limestone seal, also from an unrecorded grave, is unbored, though its design, a simple tree or bush, had been finished.

² The Mesopotamian lion has, I am informed, recently become extinct. Two specimens presented to Sir Henry Layard were described by him as maneless, taller and larger than a St. Bernard dog. Sir Henry Layard also reported that he saw lions with long and shaggy manes not far from Mohammarah. Lt.-Col. Sykes (*History of Persia*, Vol. I, p. 34) reports having seen a dead lion floating down the Karun River. The lions represented on our seals are certainly not of the maneless variety.

³ Magnificent stags and roebuck roam the forests of the Caspian Province (SYKES, *History of Persia*, Vol. I, p. 34).

especially in the case of No. 17 which has an extremely interesting ziggurat scene.

A scene which occurs in Nos. 15 and 17 of Plate VI and on the badly preserved seal, which is the last on the appended list (No. 983), is most unusual. Whether this human-headed object is intended to represent a human boat propelling itself with the aid of a pole, it is difficult to say. It may possibly represent the soul of a dead man being carried across the sacred river of death; if so, the dead body is concealed beneath a kind of canopy which is shown in both the illustrations. The boat is represented as being propelled by itself. A small animal, probably a kid, is present with this boat-like object in all three seals; it would indicate that the scene is of the land rather than of water. The whole motive is probably mythological, but that it was well known is shown by the fact that it has been found in three separate graves.¹

It appears that the utmost endeavor was made to fill up every available space on a seal. It is skillfully done in most cases, especially on those seals which portray scenes of wild life, whether the animals are rampant or in file.²

Some kind of a drill must have been employed in engraving these seals. The scenes appear first to have been outlined with a small chisel or point, and then worked over with a drill. The use of the latter is proved by the hoofs of the animals being represented simply by drill holes in seal 2. The bodies and necks of the ostriches shown on seal 4 were finished off with a drill after first being cut with a point. Whether this drilling was done with a rod rapidly revolved between the fingers or by means of a bow-drill cannot be ascertained at present.

In the majority of the seals the deeper portions of the cuttings are as well finished and polished as the surface. This finish, coupled with the extraordinary powers of composition shown in the scenes themselves, proves that the art of seal-cutting and design was at a very high level indeed at this period. The use of the same symbols for various deities as were employed in the later periods of Babylonian history is very interesting; as, for example, the star and crescent in Nos. 14 and 16 and the crescent in No. 5. The crescent is emblematic of the moon-god; the star, of the goddess Ishtar. It is possible that the four roundels which are clustered about the star of Ishtar in seal No. 14 represent planets. These symbols do not seem to have any connection with the scenes they accompany. They were probably simply intended to fill up what would otherwise have been a blank space on the seal.

The garment worn by all the human figures on seals 13, 14, 16-18, is the *kaunakes*, or short kilt, whose lower edge in the early period is formed by a single row of fringe. In two seals (Nos. 14 and 16), the figures also seem to be wearing a shawl which is draped across the right shoulder and under the left arm. If this be so, the arrangement of the garment is unusual; it is nearly always shown the other way about, leaving the right arm free for action. The

¹ Mr. Gadd tells me that a seal with a very similar design was found at Ur this season.

² For the best example of the filling-up of every vacant space on a seal, observe the heraldic tail of the lion, Plate VI, No. 5. This could not be done in the case of the antelope, and a crescent was substituted which has nothing whatever to do with the design. Also note the unfinished figure of a man in front of the antelope and the scorpion above the lion's tail.

figures in seal 19 at first sight appear to be nude, but the kilts have simply been rolled up around the waist.

The figures in the seal from grave 12 (Plate VI, No. 19) and in a seal from an unrecorded grave appear to be wearing two feathers. If these ornaments are feathers, they are probably those of the ostrich.

The seals included in the appended list all belong to the same period. The majority come from recorded graves in the "A" cemetery, and most of the remainder from the site known as "N," situated about half a mile N.N.W. of the "A" cemetery (see Plate VII).

- No. 1. 30 mm long, 16 mm in diameter. Limestone. "A" cemetery. Unfinished and unbored. Figure of a man with bird's legs, a stone (?) in left hand. Suspended from the left arm is what may be a bow. Close to and in front of the figure is the unfinished head of another figure (No. 1329).
- No. 2. 24 by 11 mm. Haematite. "A" cemetery. Two horned animals running. One animal is looking back. Crudely cut, but very spirited (No. 934). In Field Museum.
- No. 3. 17 by 9.5 mm. Serpentine. Vicinity of "N". Two long-horned antelopes in file. In front of first animal is what appears to be a tree or bush (No. 928).
- No. 4. 14 by 11 mm. Calcite. Vicinity of "N." Two animals resembling ostriches running. A thicket is represented behind them (No. 894). In Field Museum.
- No. 5. 16.5 by 10 mm. Shell. Grave 23. An antelope with long horns curving backward is standing in front of a lion. A crescent is shown over the body of the antelope, and a scorpion above the looped tail of the lion (No. 1288).
- No. 6. 12 by 8 mm. Shell. "A" cemetery. Slightly oval in section. Roughly cut figure of an antelope running through a thicket (No. 927).
- No. 7. 32.5 by 17 mm. Shell. "A" cemetery. Two registers, no line of separation. In the lower register, a line of antelopes with long horns curving backward. In the upper register, an eagle with outspread wings grasping in each claw the leg of an antelope which is looking backward. Another object between the antelopes is indistinct (No. 1277). In Field Museum.
- No. 8. 17 by 8.5 mm. Shell. "A" cemetery. An eagle with outspread wings beside two antelopes, one of which is eating from a bush (No. 843).
- No. 9. 20 by 11 mm. Haematite. "A" cemetery. Roughly cut and shaped. Figure of a man protecting an antelope from a lion (No. 1109).
- No. 10. 21 by 10 mm. Shell. Grave 8. Worn and roughly cut. Two registers. In the upper register, an eagle with outspread wings and other objects which are indistinct. In the lower register, a row of antelopes with long horns (No. 985).
- No. 11. 20 by 9 mm. Shell. Vicinity of "N." Two lions with bodies crossed, each attacking an antelope. Two snakes standing on their tails with their bodies twisted together in rope-fashion (No. 773).
- No. 12. 25.5 by 12 mm. Shell. "A" cemetery. A little weathered. An eagle with outspread wings with one claw grasping an antelope looking backward, with the other a lion (No. 1348).
- No. 13. 36 by 19 mm. Shell. Grave 21. Rather worn. A lion attacking two antelopes in the presence of a figure seated before a shrine (No. 1333).
- No. 14. 36 by 20 mm. Shell. Grave 24. Somewhat worn. Two lions attacking an antelope which is being protected by a man. A star and crescent are in the background (No. 1312).
- No. 15. 19 by 11 mm. Shell. Grave 23. A curious scene representing the figure of a man in a kind of shell-like case with a forked staff in the left hand and a double-pronged instrument in the right. A calf is represented in the background with other objects which are indistinct (No. 1287).

- No. 16. 24.5 by 12.5 mm. Limestone. Vicinity of "N." Figure of a lion attacking a stag. In front is a design of a coiled rope, above which are a star and crescent and the symbol of Ishtar. A man protecting the stag has an arrow in his right hand and a bow in his left (No. 1117). In Field Museum.
- No. 17. 28 by 13.5 mm. Shell. "A" cemetery. Two registers. The upper register shows a scene very similar to that of No. 15, the only difference being that the shell-like case is here very much like a boat. The lower register is unusually interesting. Two figures are shown building a ziggurat and about to place a brick on the top of it. The ziggurat has four stages and panelled faces. This work is being performed in front of a seated figure wearing a longer skirt than the rest of the figures. Three figures in front of the seated figure are apparently carrying mud or bricks on their heads to the ziggurat workers (No. 1420). In Field Museum.
- No. 18. 33 by 16 mm. Shell. Grave 9. Two registers. In the upper register are two lions with their bodies crossed, each attacking an antelope. Three men in short kilts are trying to protect the antelopes, two of them with bows and arrows. In the lower register are a long group of figures in short kilts with a priest performing a rite over a table or altar (No. 994).
- No. 19. 30 by 22 mm. Bituminous limestone. Grave 12. A man in a short kilt separating two lions which stand on their hind legs. He is holding the lions by their throats. Farther on are two male figures, one clasping a lion by the throat, the other trying to soothe an antelope. These two last figures appear to be armed with daggers. A small kid is also represented (No. 1132).

SEALS NOT ILLUSTRATED

A number of seals have not been reproduced owing to their bad condition. Particulars of these are given below under the numbers of the burials in which they were found.

- Grave 1. 26 by 14 mm. Glaze. Two long-horned antelopes in file (No. 652).
- Grave 4. 22 by 13 mm. Limestone. Subject not clear (No. 714). In Field Museum.
- Grave 11. 32 by 17 mm. Limestone. Subject not clear (No. 1062).
- Grave 15. 23 by 11.5 mm. Shell. Two lions with bodies crossed, seizing an antelope. Tree in background (No. 1174).
- Grave 16. 28 by 15 mm. Shell. Apparently a scene of a man standing by a sheaf of corn (No. 1189a). In Field Museum.
- Grave 16. 28 by 15 mm. Shell. Lion attacking an antelope which is being defended by a man (No. 1189b). In Field Museum.
- Grave 16. 29.5 by 14 mm. Shell. Quite indistinct (No. 1189). In Field Museum.
- Grave 19. 17.5 by 18.5 mm. Calcite. Quite indistinct (No. 1262).
- Grave 23. 30 by 19 mm. Shell. A seated deity can just be made out (No. 1294).
- Grave 26. 26 by 12.5 mm. Shell. A lion attacking an antelope which is being protected by a man armed with bow and arrow (No. 1353).
- Grave 32. 20 by 12 mm. Shell. Two long-horned antelopes in file (No. 1483). In Field Museum.
- Grave 32. 19 by 10 mm. Shell. Three long-horned antelopes in file (No. 1484). In Field Museum.
- Grave 32. 35 by 15.5 mm. Shell. Impression weathered away (No. 1485).
- Grave 34. 16 by 8.5 mm. Lapis lazuli. An animal figure can just be made out, and seems to be that of a long-horned antelope. Though this seal was made of hard stone, it had been reduced to minute fragments by the action of salt (No. 1513).

The following seals come from unrecorded graves in the "A" cemetery, and are given under their registration numbers:—

- No. 1046. 19 by 14 mm. Limestone. Unbored. Scene of a simple tree, roughly carved. In Field Museum.
- No. 1279. 34 by 18 mm. Shell. Scene of man with feathers (?) in his hair (cf. No. 19), dressed in a short, open kilt, trying to quiet two antelopes who are rearing on their hind legs. Each antelope is being attacked by a lion. In Field Museum.

The seals below come from the "P" site, but belong to the same period as the seals from the "A" cemetery. They are given below under their registration numbers.

- No. 983. 26 by 15 mm. Calcite. Scene very similar to upper register of No. 17, but the tail of the shell-like object terminates in a human head. Other features are indistinct.
- No. 1077. 27 by 18 mm. Calcite. Figure of two antelopes standing back to back. The seated figure above them is dressed in a single *kaunakes*. In Field Museum.

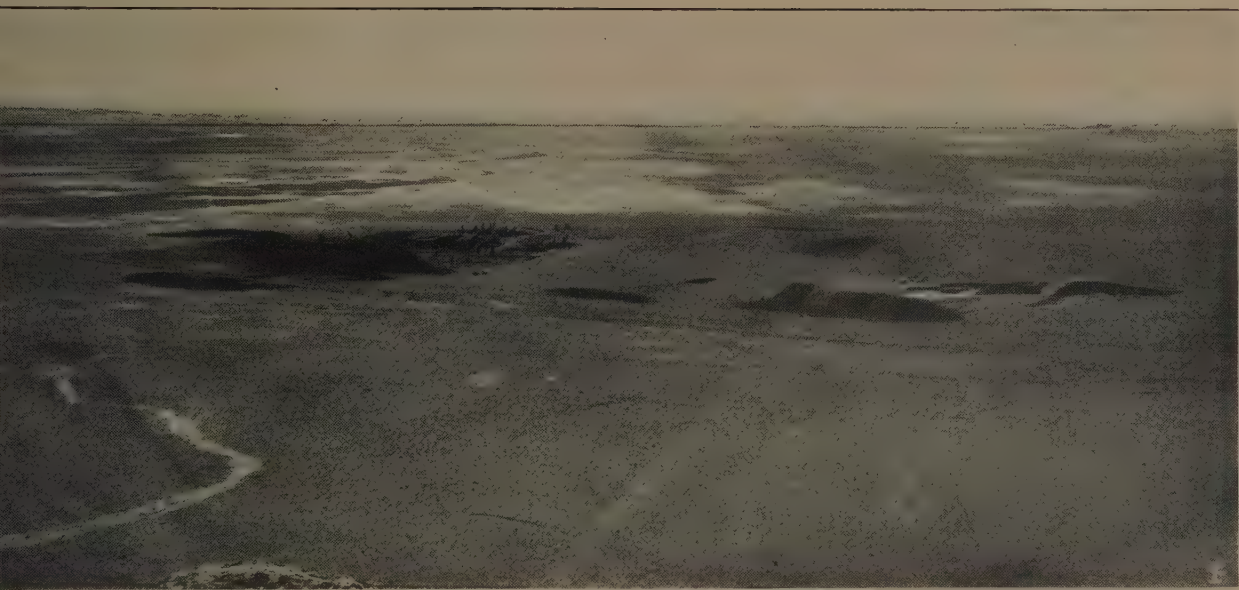
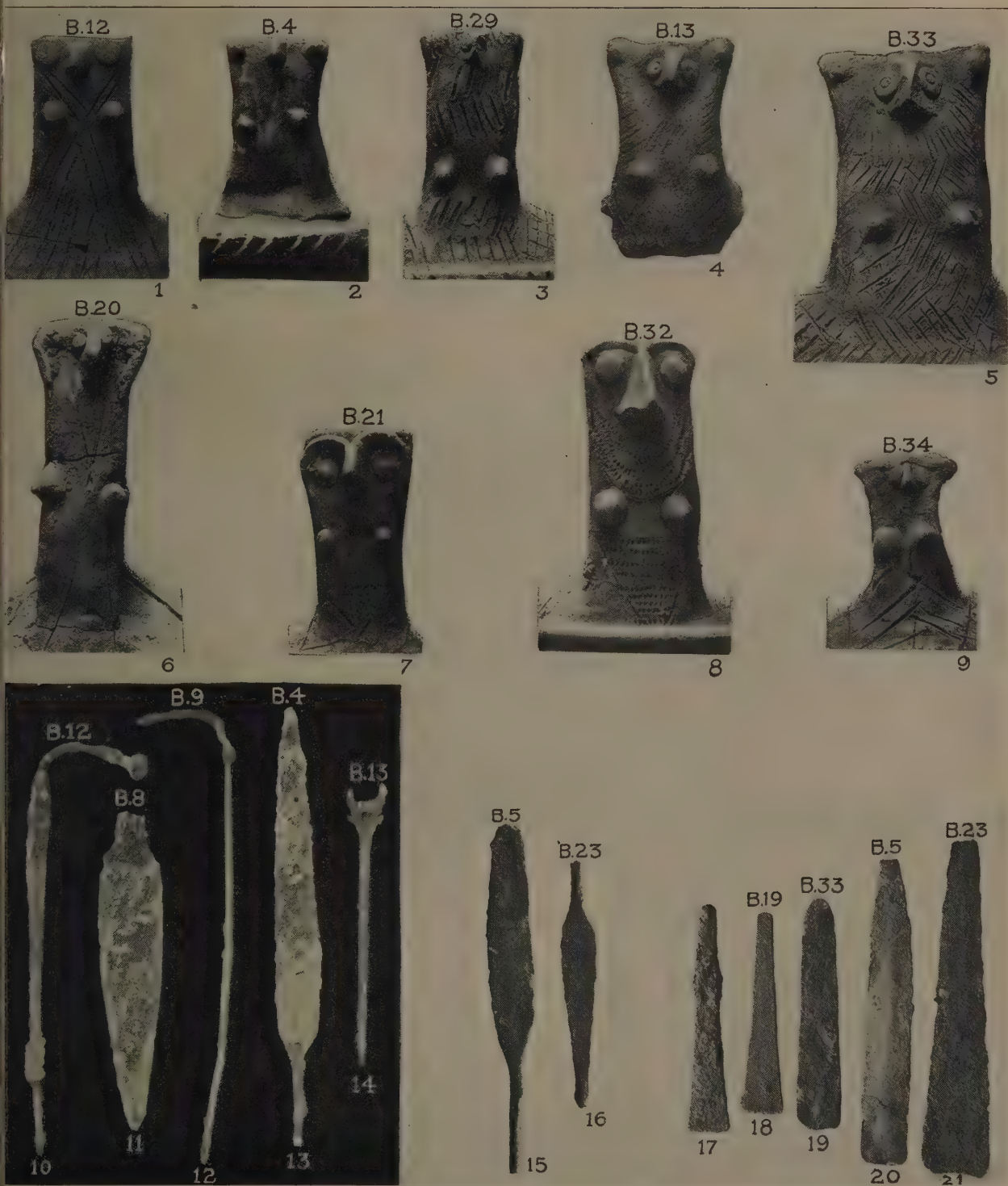


FIG. 1. VIEW OF "A" CEMETERY FROM ZIGGURAT AT INGHARRA (p. 9).

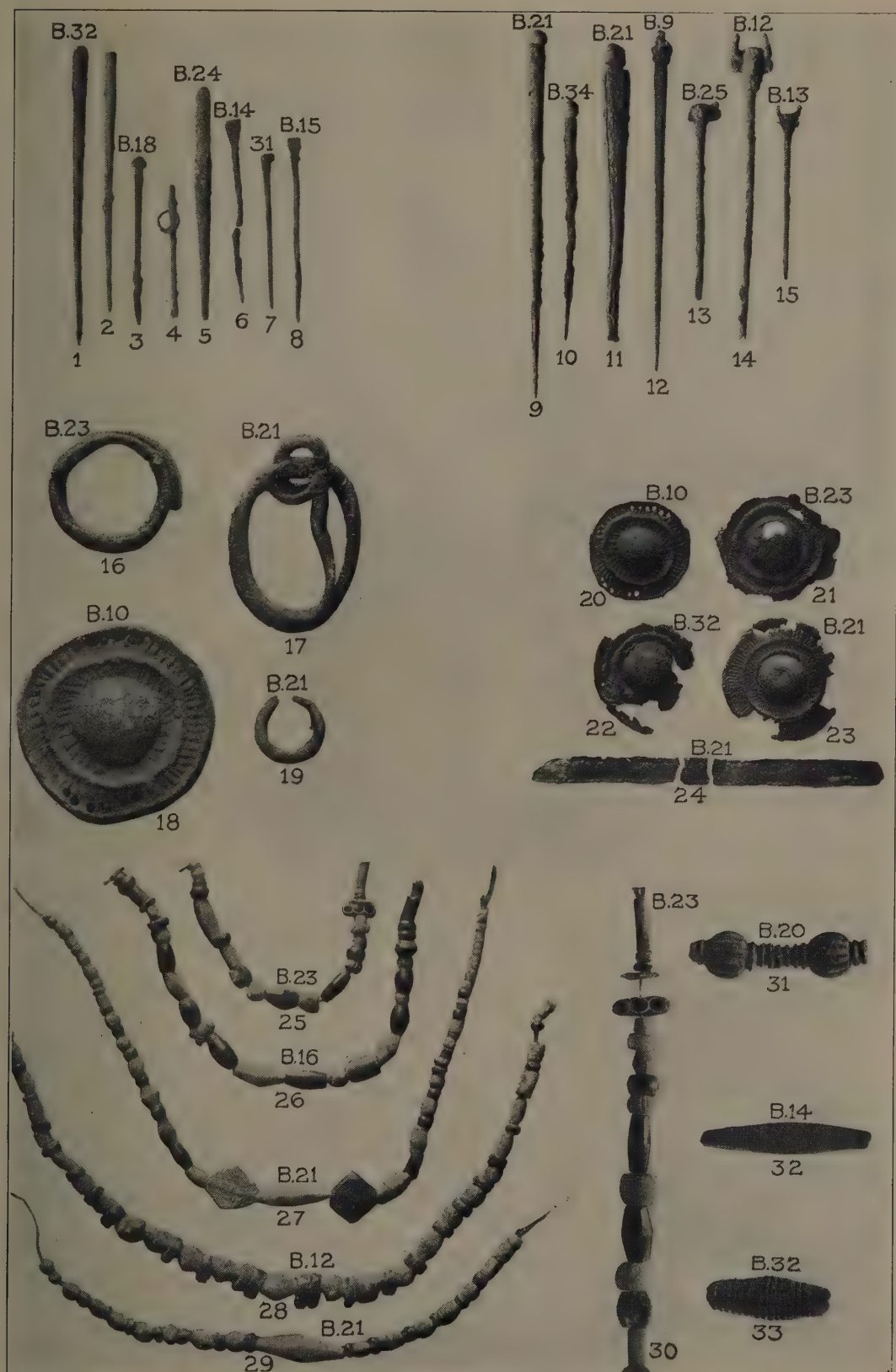


POTTERY (pp. 6, 21, 24, 25, 31).



JAR HANDLES AND COPPER IMPLEMENTS (pp. 22, 40, 42).



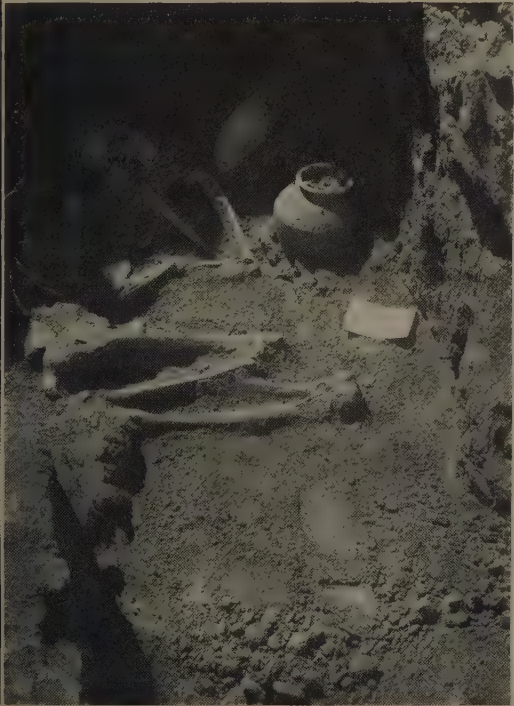




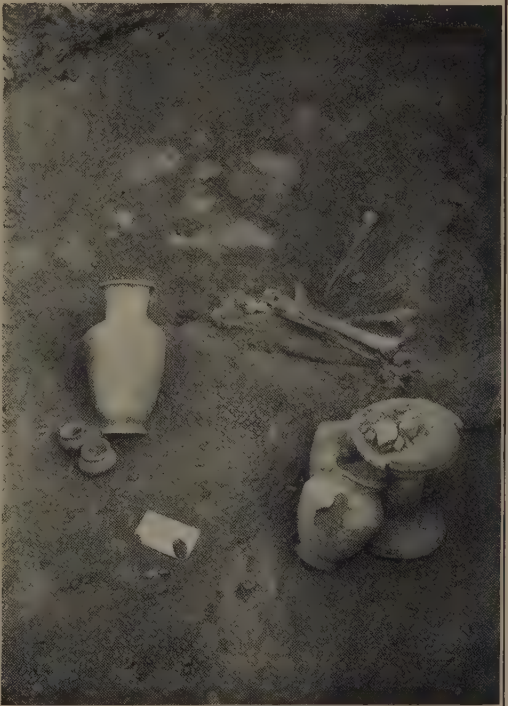
BURIAL 5.



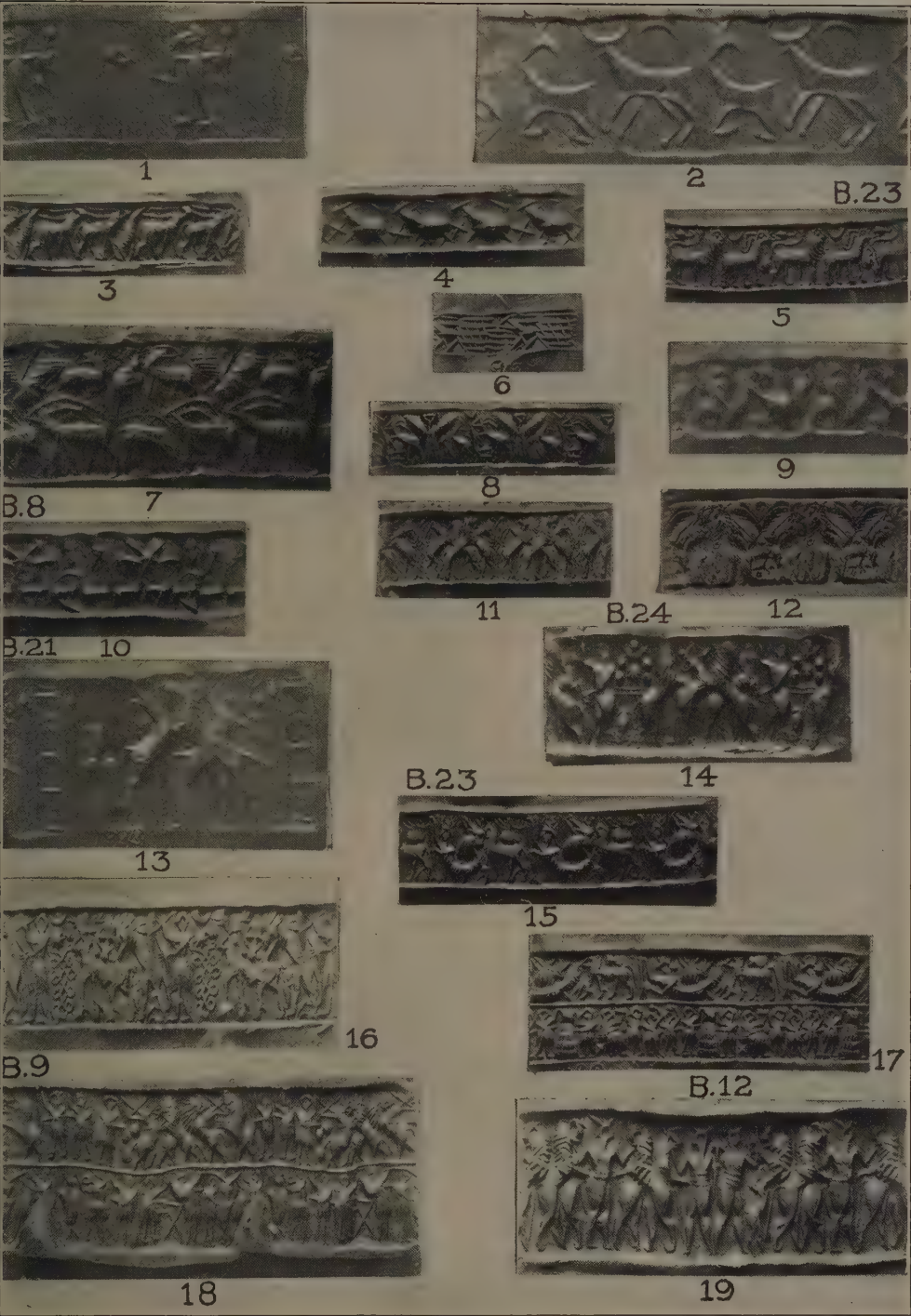
BURIAL 19.



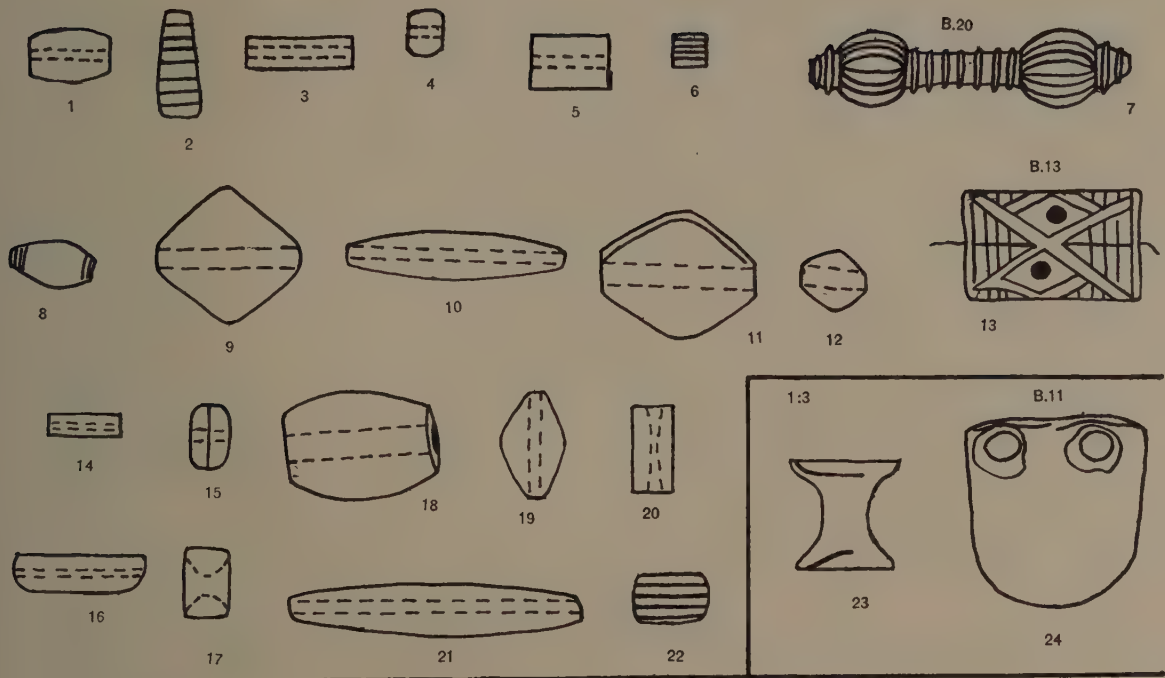
BURIAL 31.



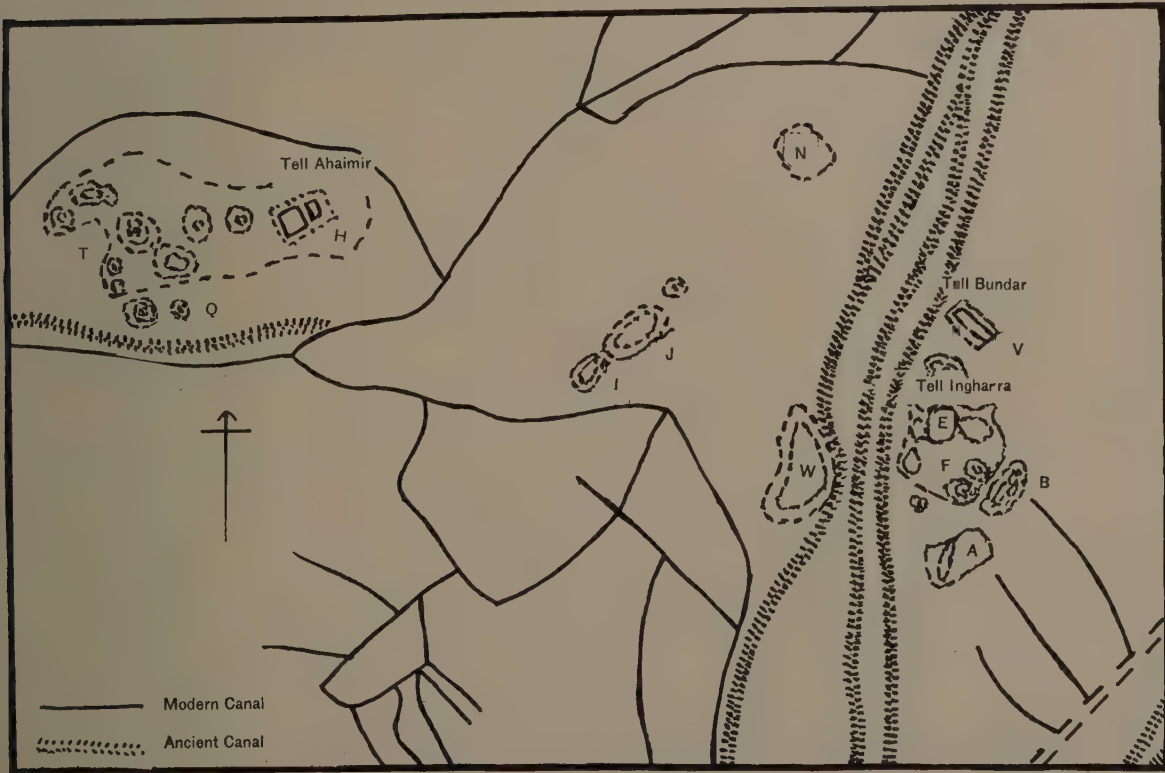
BURIAL 20.



CYLINDER SEALS (pp. 18, 59-61).

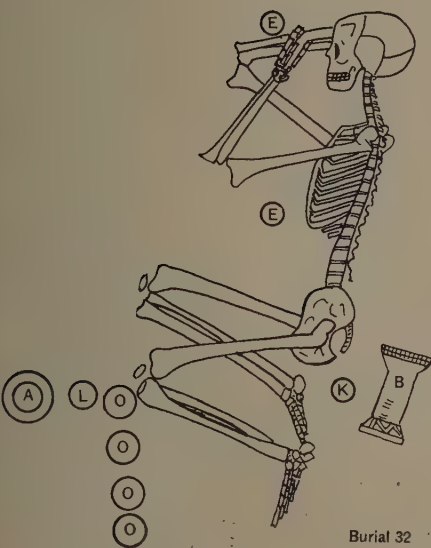


BEADS (pp. 19, 53-57).
Actual size.

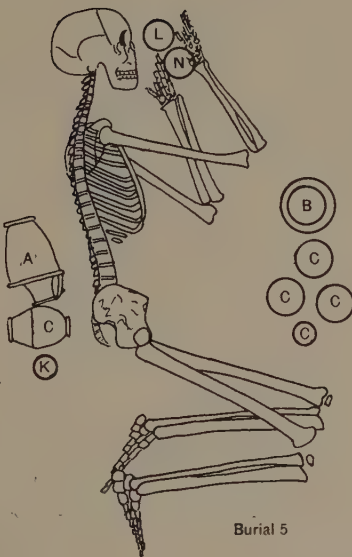


SKETCH PLAN OF KISH (p. 9).

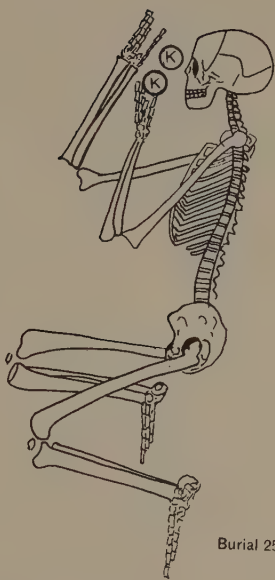
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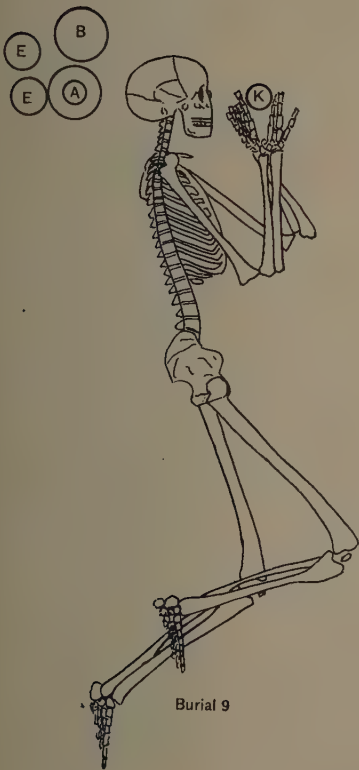
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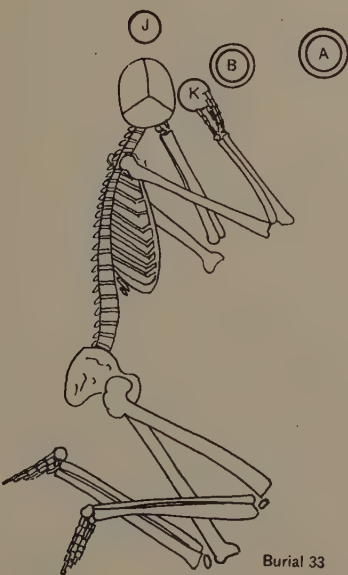
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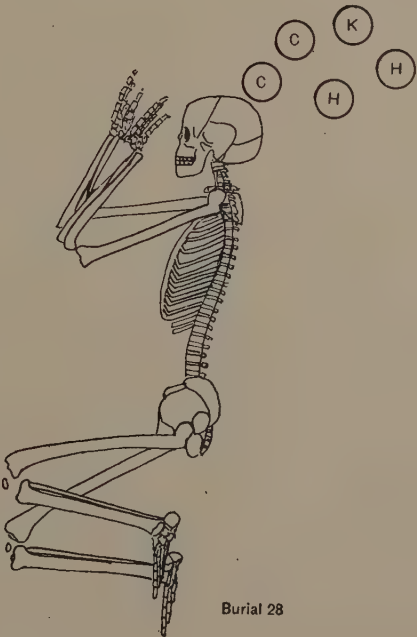
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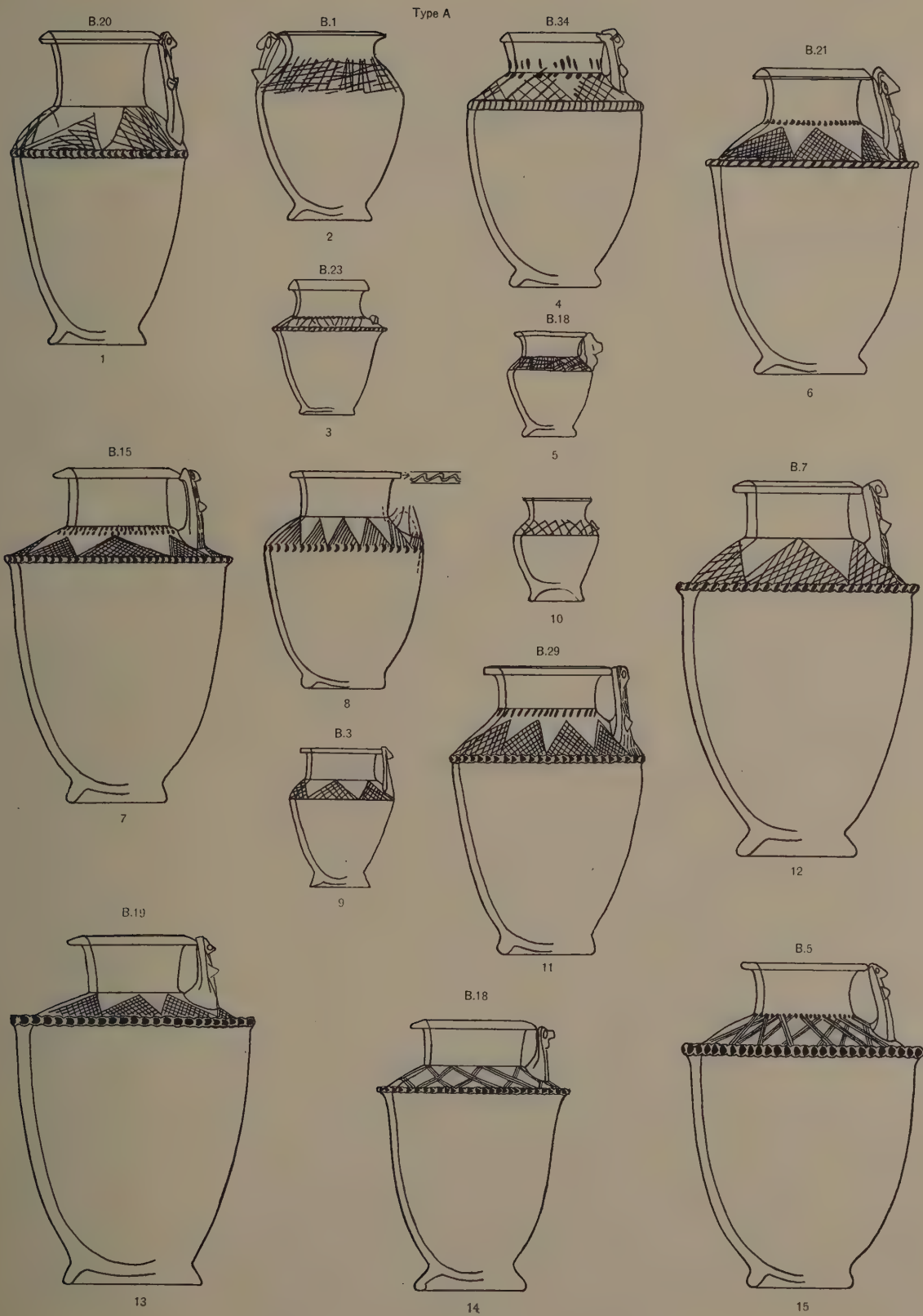
Burial 9



Burial 33



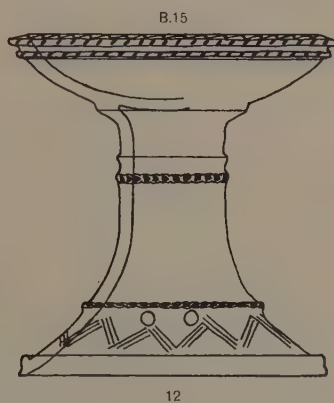
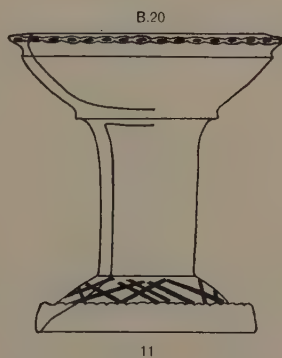
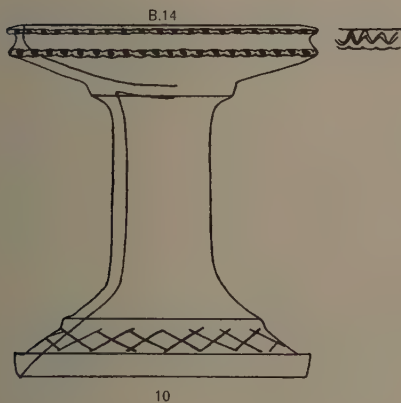
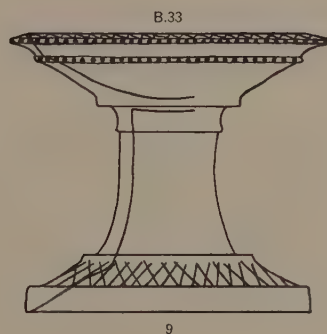
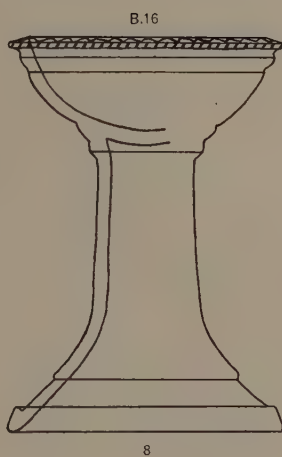
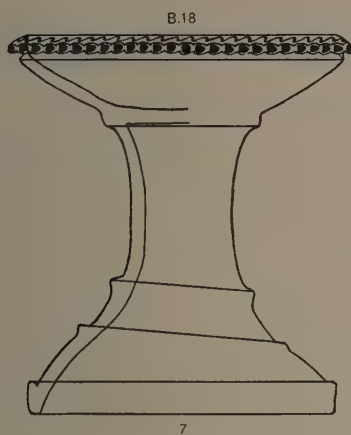
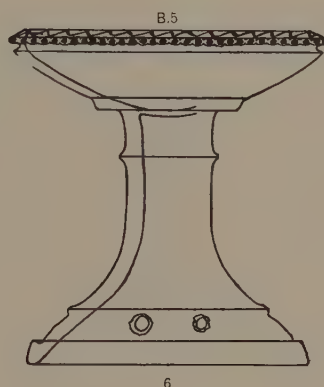
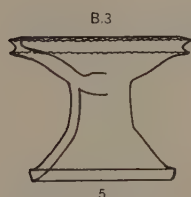
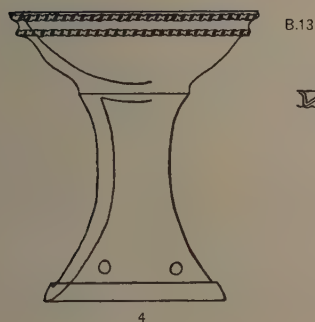
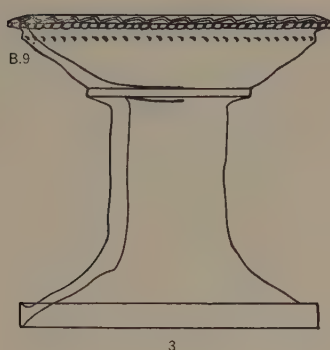
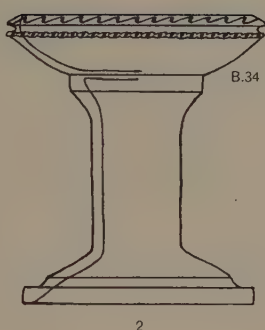
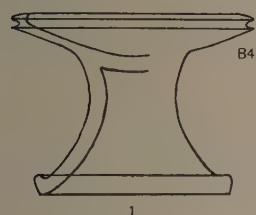
Burial 28



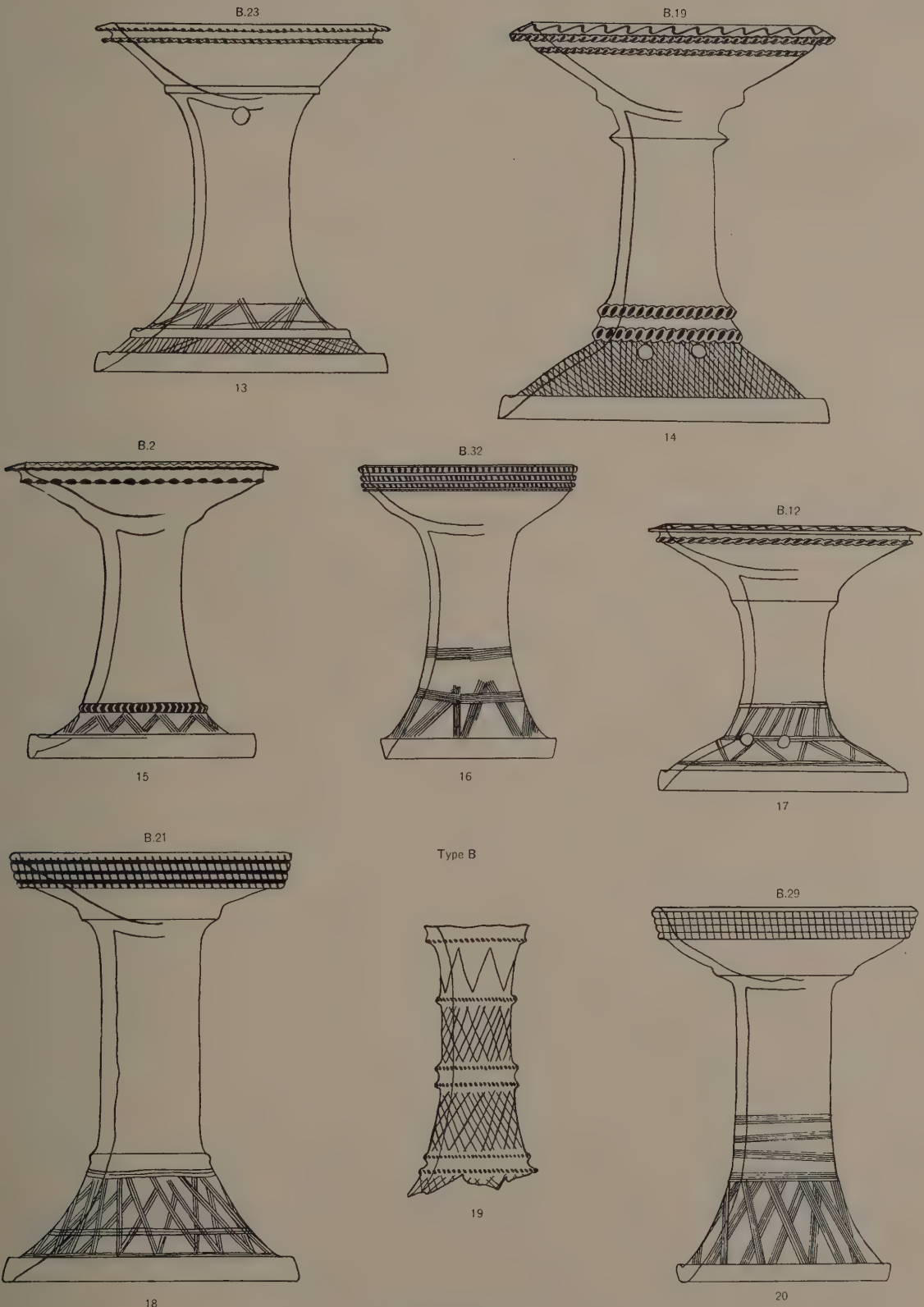
HANDLED POTTERY (pp. 21, 24, 27).
Scale 1:12.



POTTERY TYPE A (p. 21).
Scale 1:12.



POTTERY TYPE B (pp. 24-27).
Scale 1:12.



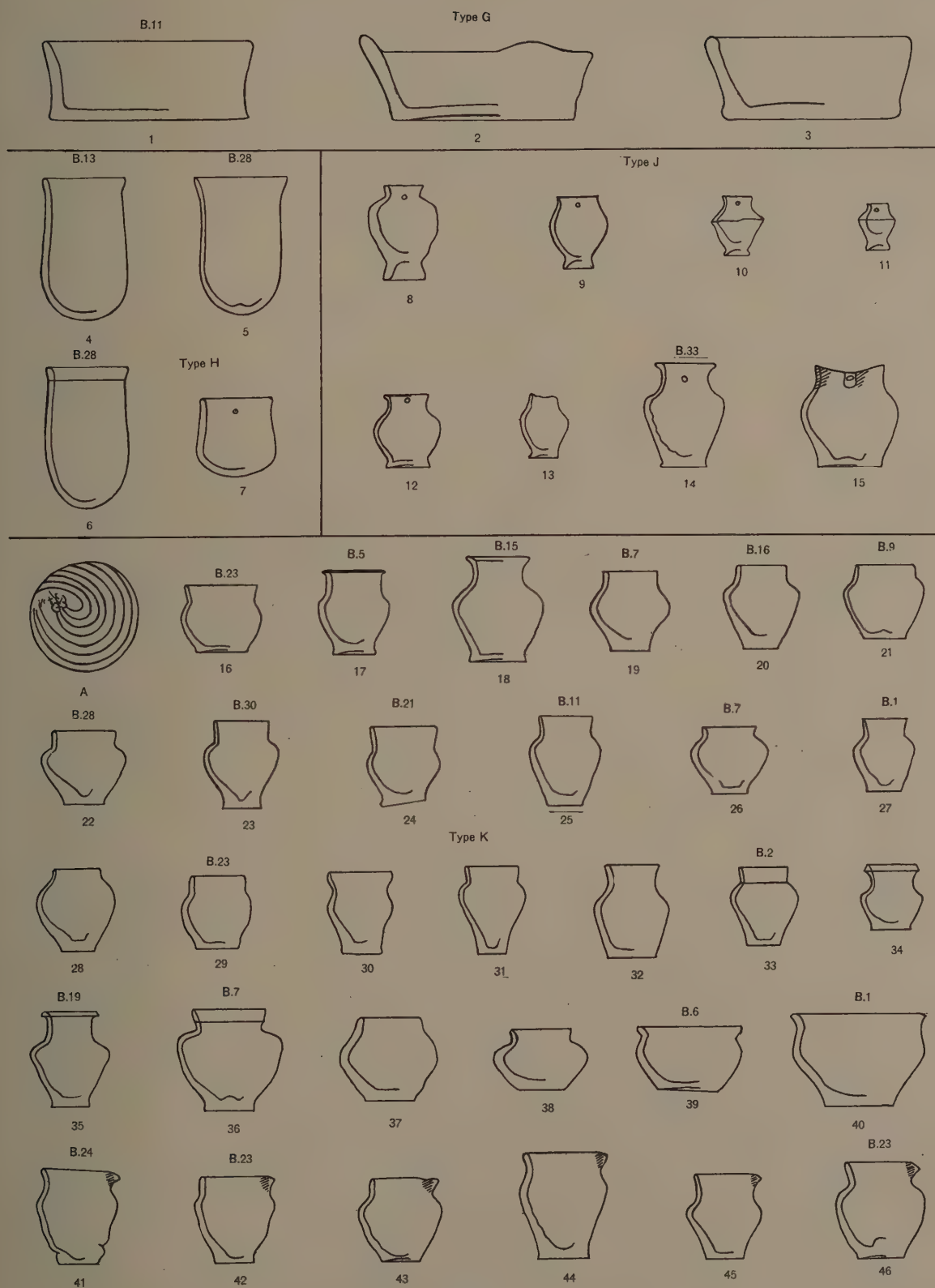
POTTERY TYPE 'B' (p. 24).
Scale 1:12.



POTTERY TYPE C (p. 28).
Scale 1:12.

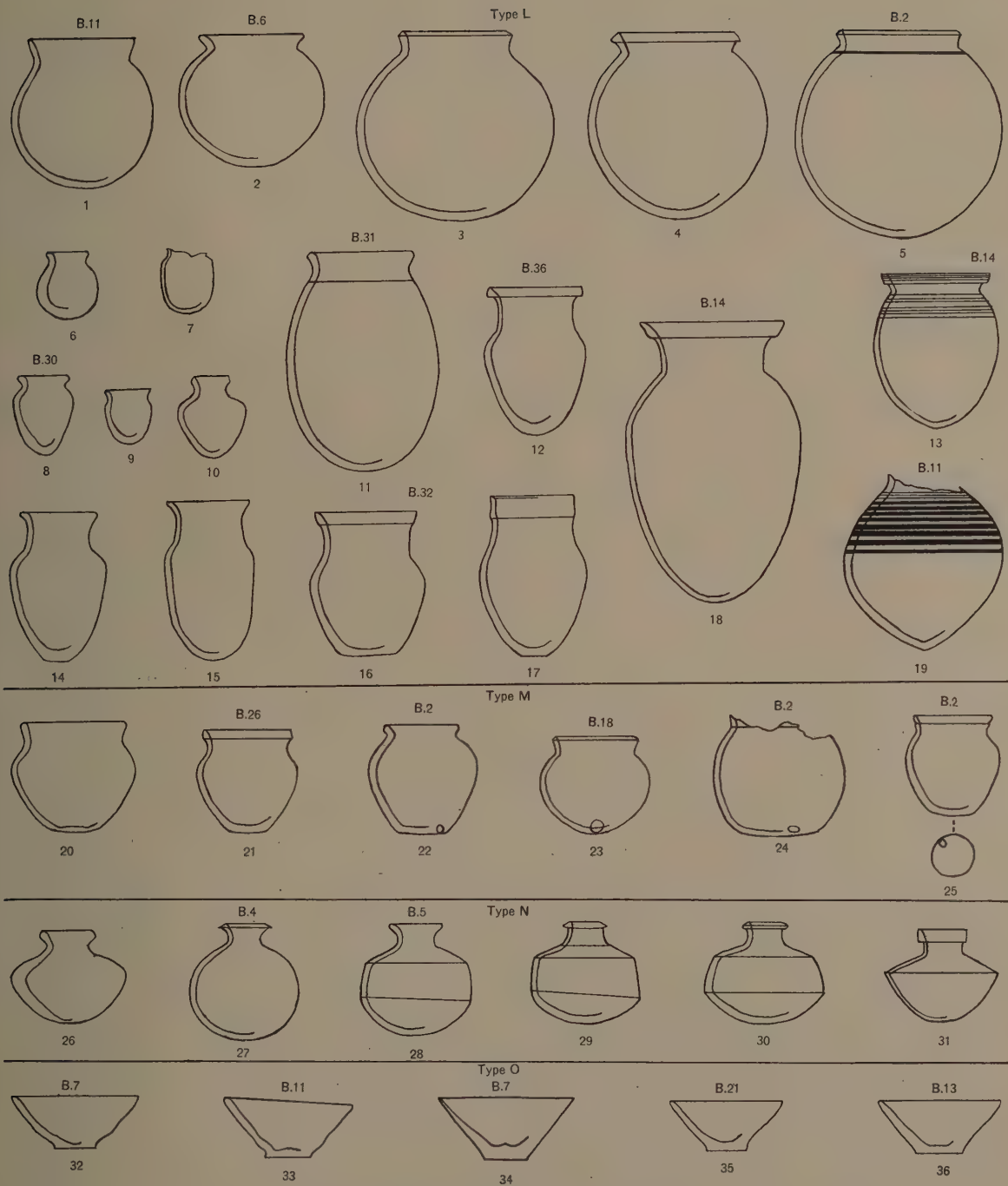


POTTERY TYPES D, E, F, (pp. 29-32).
Scale 1:12.

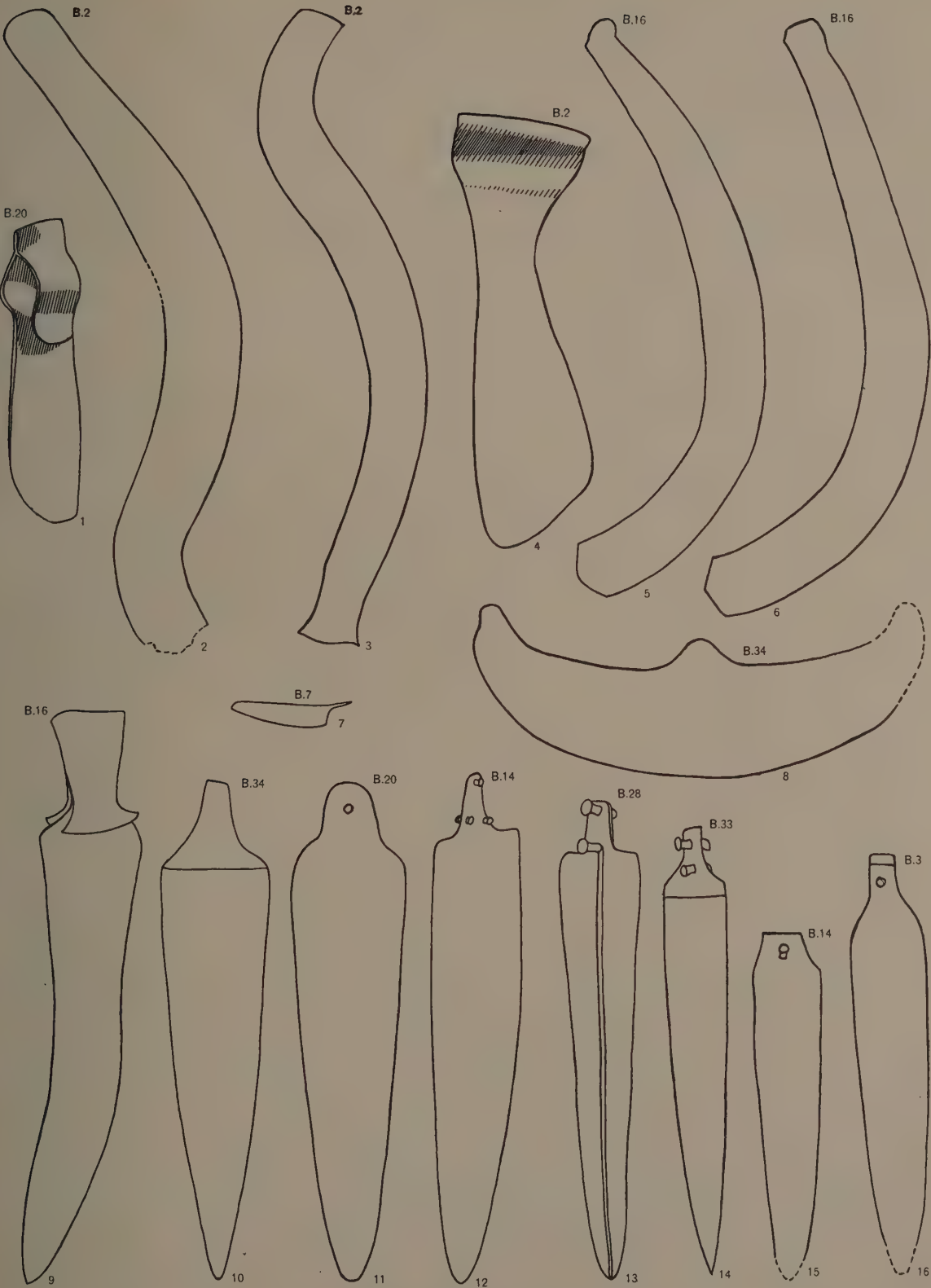


POTTERY TYPES G, H, J, K' (pp. 29, 32-34).

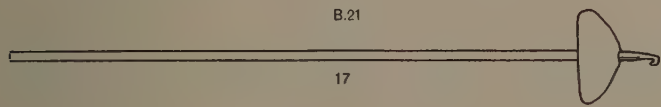
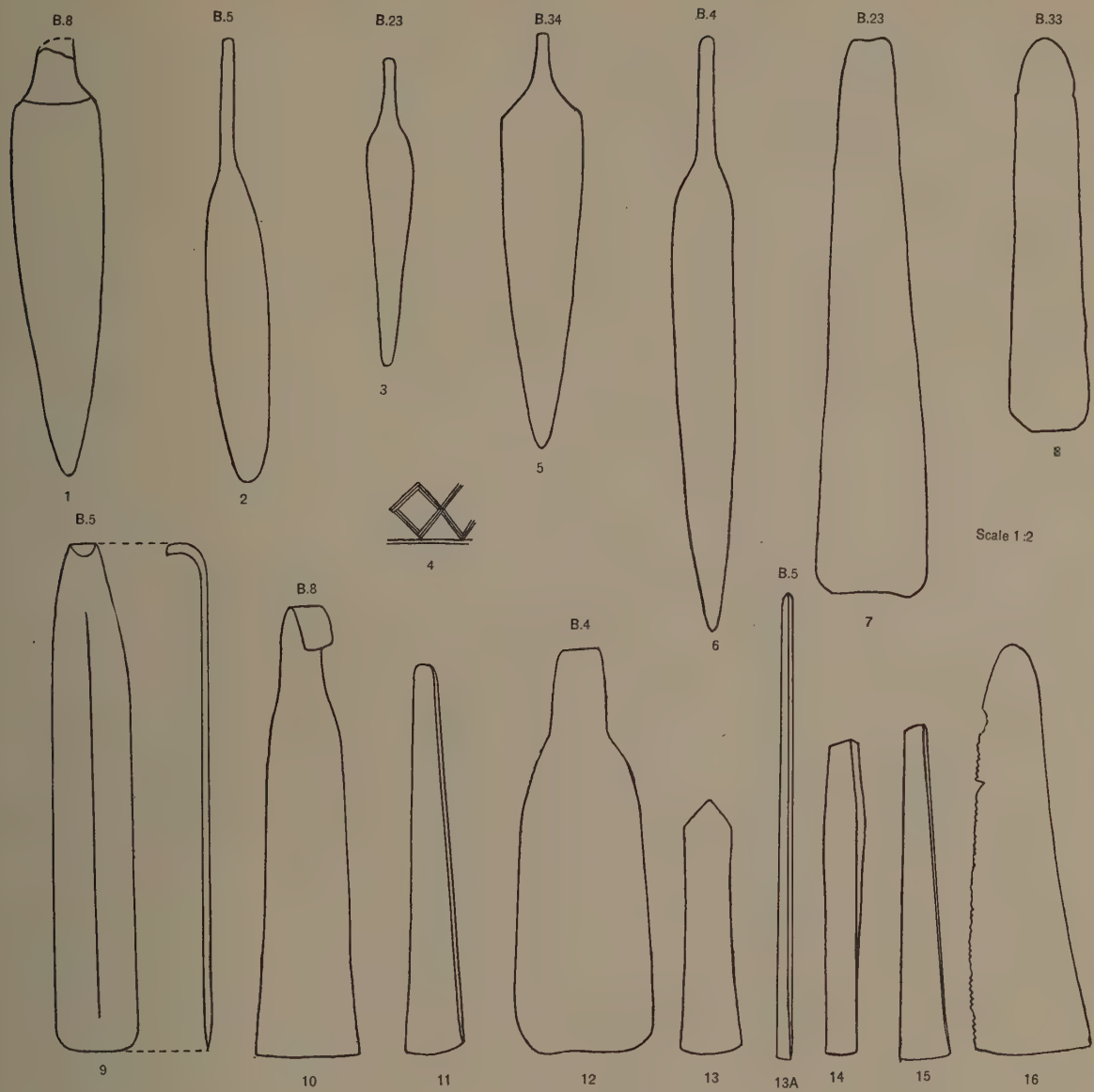
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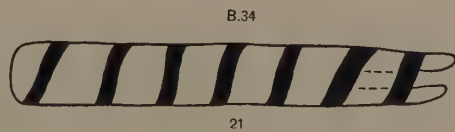
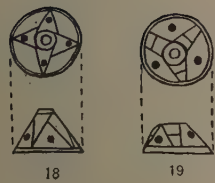
POTTERY TYPES L, M, N, O (pp. 34-36).
Scale 1:12.



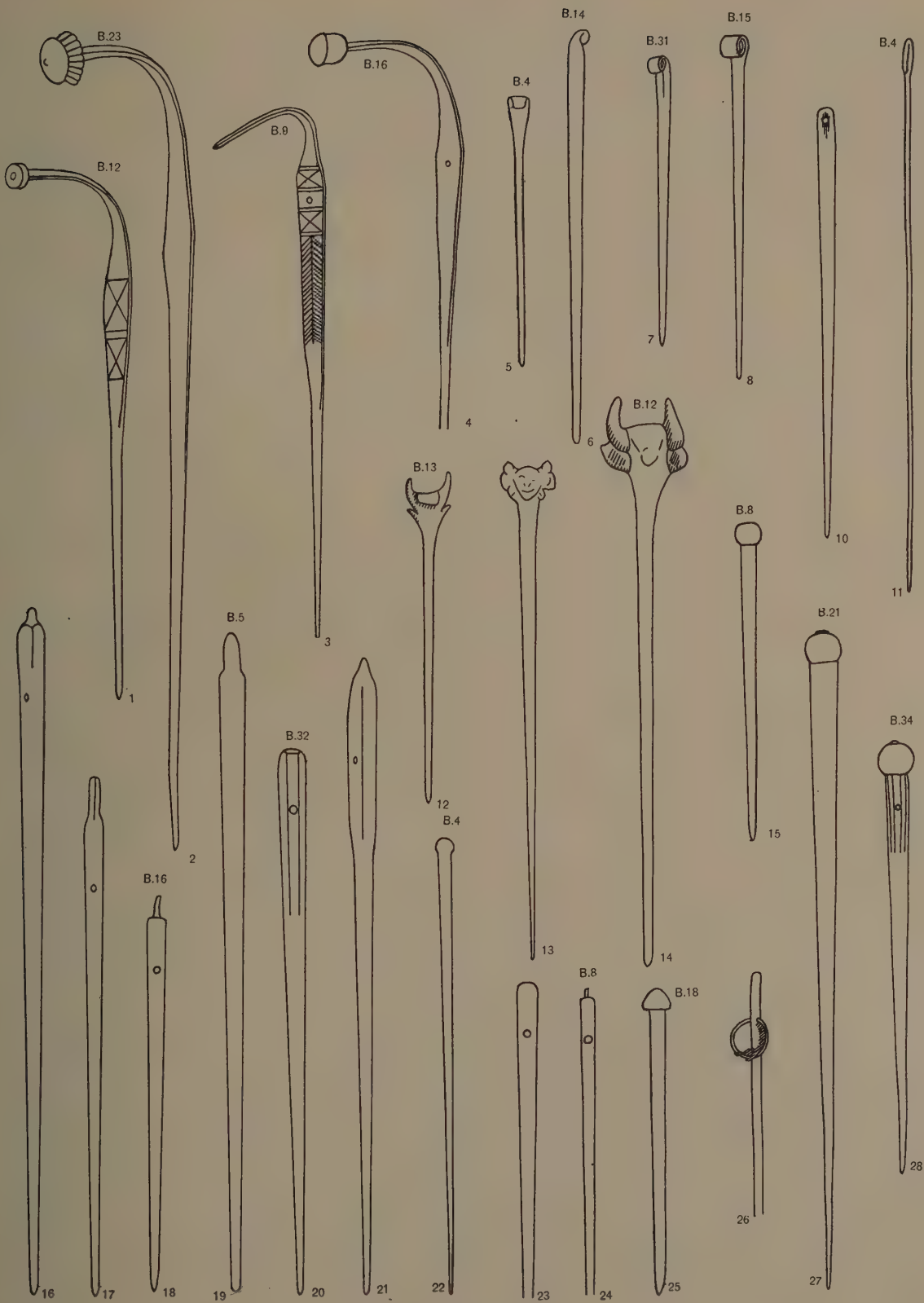
COPPER IMPLEMENTS (pp. 20, 38-40).
Scale 1:4.



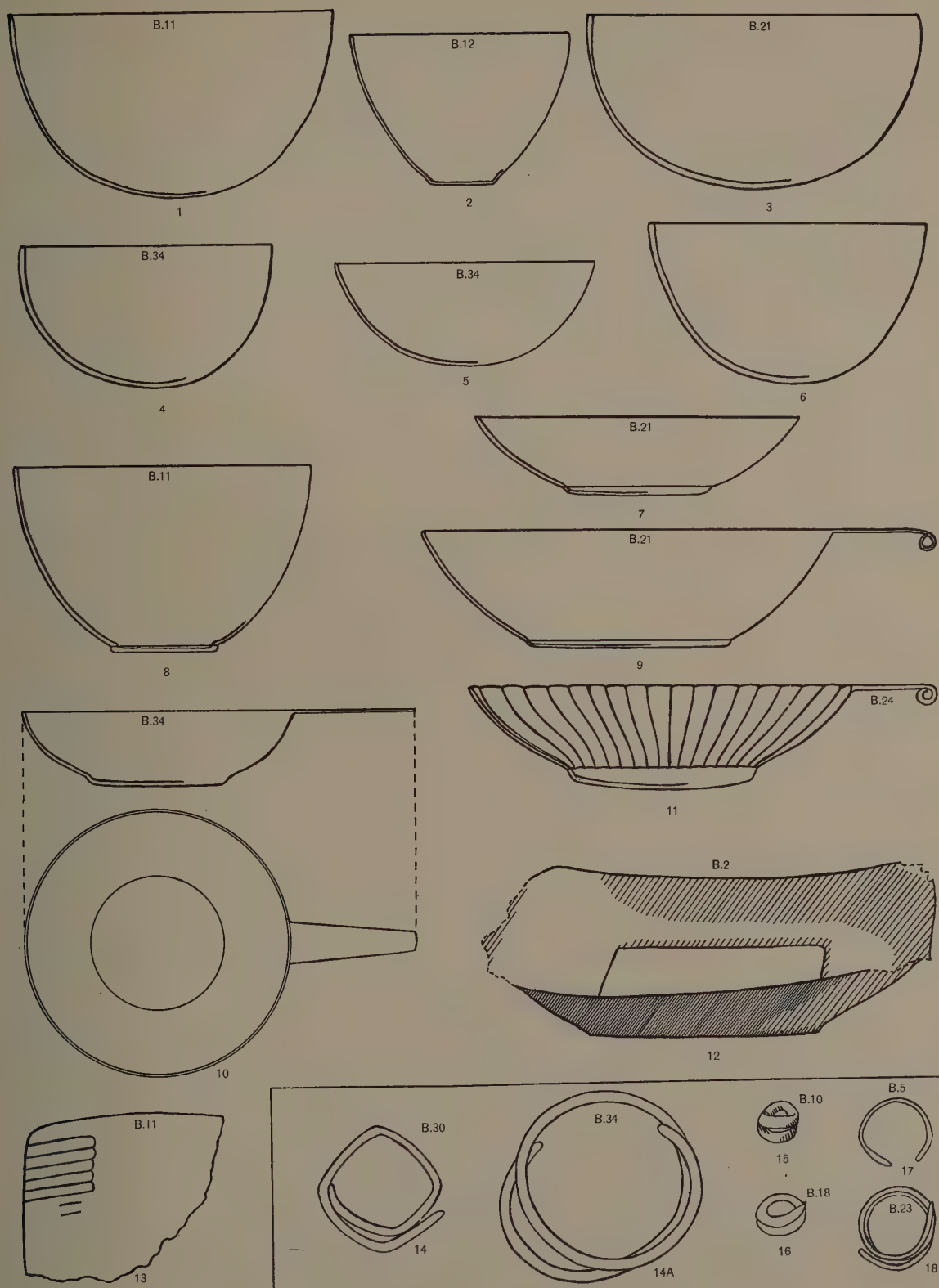
Scale 1:2



COPPER IMPLEMENTS (pp. 33-44).
Scale 1:4.



COPPER HAIR-PINS (pp. 44-48).
Scale 1:4.



COPPER BOWLS (pp. 17, 48-53).
Scale 1:4.

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VOLUME I, No. 2

A SUMERIAN PALACE AND THE "A"
CEMETERY AT KISH, MESOPOTAMIA
PART II

BY

ERNEST MACKAY

WITH PREFACE BY STEPHEN LANGDON

42 Plates, 1 Map

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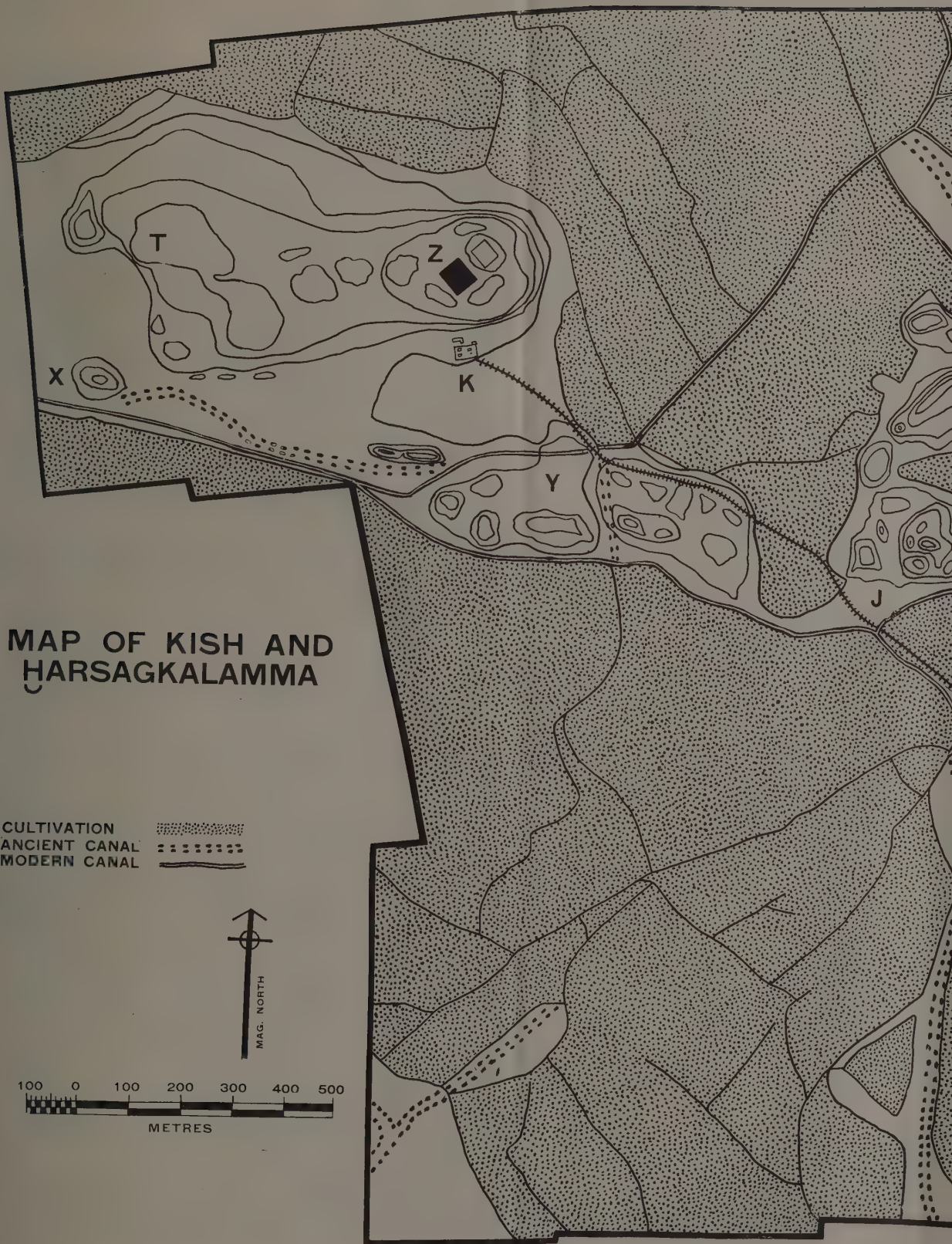
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MAP OF KISH AND HARSAGKALAMMA

CULTIVATION
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CONTENTS

List of Plates	70
Preface by Stephen Langdon	73
Introduction	75
Topography of Kish and Harsagkalamma	79

I. The Sumerian Palace at Mound "A," Kish

Description of the Palace "A"	84
Some Military Aspects of the Palace "A" by Lieutenant Colonel W. H. Lane	101
The Dating of the Palace	104
Bricks and Brickwork of the Palace	106
Sun-dried Bricks	106
Baked Bricks	108
Mortar	110
Foundations	110
Errors	111
Measurements of Chambers	112
Later Walling and Drains	113
Objects of the Palace Period	120

II. The "A" Cemetery, Kish (continued)

The Graves	128
Pigment Shells	131
Rubbing Stones	132
Amulets	132
Glaze	133
Metals	134
Minerals	134
Toys	135
Ivory	135
Shell	135
Unusual Objects	136
Summary	136
Graves of a Late Period	138
Pottery	139
Handled Jars Type A	142
Braziers Type B	146
Straight-shouldered Ware Type C	148
Spouted Jars Type D	149
Cup-based Pottery Type E	149
Bowls Type F	150
Pans Type G	150
Beakers Type H	150
Jars with Holes for Suspension Type J	151
Cucumber-shaped Jars Type JA	151
Double-mouthed Jars Type JB	151
Flat-based Cups Type K	151

Lipped Flat-based Pottery Type KA	152
Round- and Pointed-Based Pottery Type L	152
Cups with Holed Bases Type M	152
Narrow-mouthed Pottery Type N	152
Simple Dishes Type O	153
Ribbed Pottery Type P	153
Pottery Type Q	153
Perforated Dishes Type R	154
Perforated Cylinders Type RA	154
Unusual Shapes Type S	154
 Tools and Weapons	 157
Battle Axes	158
Adze-shaped Battle Axes	159
Celts	160
Stone Mace-heads	160
Curved Blades	160
Daggers	162
Knives	163
Spear-heads	164
Razors	164
Chisels	165
Arrow-heads	166
Fish-hook	166
Harpoons	166
Spatula	167
Split-pin	167
Copper Nails	167
Hones	167
Flint Implements	167
 Household and Toilet Articles	 168
Spindles and Spindle-whorls	168
Toilet Cases	168
Hair-pins	169
Curved Hair-pins	170
Pins with Coiled Heads	171
Animal-headed Pins	171
Pins with Round Heads	171
Needles and Bodkins	174
Metal Bowls and Dishes	175
 Personal Ornaments	 177
Medallions	177
Filletts	178
Ear-rings	179
Bracelets	180
Finger-rings	181
Nose Ornaments	181
Chains	182
Beads and Necklaces	182
Glazed Beads	184
Decorated Carnelian Beads	184

CONTENTS

69

Shell Beads	186
Gold Beads	187
Silver Beads	187
Copper Beads	187
Crystal Beads	188
Onyx Beads	188
Jasper Beads	188
Porphyry Beads	188
Quartz Beads	188
Agate Beads	189
Haematite Beads	189
Bone Beads	189
Cylinder Seals	190
Stone Vessels	199
Miscellaneous Objects of Uncertain Date from Mound "A"	202
Notes	214

LIST OF PLATES

- XXI. Plan of Palace "A."
- XXII. Skeleton Plan of Palace Showing Later Buildings and Position of Graves.
- XXIII. Section of Palace "A."
- XXIV. Mound "A" from Ingharra. View of Ingharra. Stairway of Palace.
- XXV. The Stairway, Palace "A."
- XXVI. The Colonnade of Palace "A."
- XXVII. Colonnade and Pillared Hall.
- XXVIII. Buttress against Façade of Palace.
- XXIX. Partial Excavations of Palace "A."
- XXX. Various Constructions in Palace.
- XXXI. Various Constructions in Palace.
- XXXII. Details of Brickwork.
- XXXIII. Buttress in Annex. Excavation in Progress.
- XXXIV. Conjectural Elevations of Palace "A."
- XXXV. Inlays from Palace "A."
- XXXVI. Inlay and Objects from Palace "A."
- XXXVII. Objects from Palace "A" and from Greek Burial.
- XXXVIII. Objects of Copper, Pottery, Shell, and Stone from Palace "A" and from Graves.
- XXXIX. Copper Tools and Implements from Mound "A" and from Graves.
- XL. Copper Hair-pins, Needles, and Spindles from Graves in Mound "A."
- XLI. Cylinder Seals from Mound "A" and from Graves.
- XLII. Cylinder Seals, Stamp Seals, Weights, etc., from Palace "A" and from Graves.
- XLIII. Objects from Mound "A" and from Graves.
- XLIV. Objects from Mound "A" and Pottery from Graves.
- XLV. Pottery and Pottery Handles from Mound "A" and from Graves.
- XLVI. Chariot Models from Mound "A."
- XLVII. Pottery Figures from Mound "A."
- XLVIII. Pottery Type A.
- XLIX. Pottery Types A and B.
 - L. Pottery Types B and ornamented.
 - LI. Pottery Types C and D.
 - LII. Pottery Types E, F, G, H, J, JA, and JB.
 - LIII. Pottery Types K, KA and L.
 - LIV. Pottery Types M, N, O, P, Q, R, and S.
 - LV. Stone Bowls and Dishes.
 - LVI. Stone Vases, Dishes, and Mortars.
 - LVII. Copper Bowls and Dishes.

- LVIII. Copper Spindles and Hair-pins.
- LIX. Needles, Fillets, Personal Ornaments, and Stone Objects from the Palace, Mound "A," and the Graves.
- LX. Beads and Pendants, etc.
- LXI. Copper Wands, Spear-heads, Adzes, etc., from Mound "A" and from the Graves.
- LXII. Battle Axes, Knives and Daggers, from Mound "A" and from the Graves.

PREFACE

This volume contains the first publication of the architectural discoveries and the rich Sumerian archaeological treasure recovered at Kish. The great palace of the early kings of Kish has been completely revealed; this splendid contribution to the history of Sumero-Babylonian architecture is an entirely new achievement in the history of Mesopotamian excavations. Mr. Mackay's monograph, which includes the mass of archaeological discoveries made during the last season, presents new facts concerning the life and manners of the early Sumerian and Semitic inhabitants of Kish on every page, and the readers may surmise the satisfaction that the promoters of this expedition derive from having uncovered the oldest and most unique royal residence in Sumer and Accad.

The objects found in the graves, which are obviously of a later date than the great building, especially the seals,¹ prove the place was used as a cemetery already in pre-Sargonic times. Since Sargon, founder of the empire of Agade in 2752 B.C., overthrew the last dynasty of Kish, founded by Kug-Bau, it seems probable that the old palace of the mighty kings of Kish had fallen into decay and was used for a burial-ground in the days of Kug-Bau, Gimil-Sin, and Ur-Ubaba, of the third and fourth kingdoms of Kish (2943-2753 B.C.). This is the period to which the mass of Sumerian pottery, copper tools and weapons, seals and ornaments must be assigned. It is therefore obvious that the last rulers of Kish did not occupy the spacious and stately palace of their ancestors. Perhaps we shall learn more concerning them when the huge temple of the mother-goddess Ninharsag or Innini will have been excavated at Ingharra. The ancient kings lived in the shadow of this mighty temple whose massive ruins and double stage-tower now rise high above the low ruins of the palace—the temptation and the despair of the excavator. These we intended to attack in force next season, but such is the colossal size of the temple ruins that no rapid results like those which attended the last two seasons' work on the palace mound can be expected. It is unlikely that any other great Sumerian palace or building of the early plano-convex period will ever be found in such comparatively undisturbed condition in Mesopotamia. In the other old capitals of Sumer, Erech, Adab, and Ur, the old palaces were almost destroyed by later superimposed buildings. The same is true of the residences of powerful Patesi kings at Lagash and Nippur.

By extraordinary good fortune the expedition found the old Kish palace, as it stood in the last days of the great kings of early Kish. It was already a pile of ruins in the days of Ur-Illababa and Sargon. The rulers of Babylonia from Sargon to the days of Alexander the Great could have had no knowledge of its existence. Its ruins were one of those sites of long past decay to which the later poets and philosophers referred in the supreme expression of Babylonian pessimism, "Ascend thou unto the ruins of cities, go to those of old. Behold the skulls of the later and the former ones. Who is now an evil-doer, who is now a benefactor?"²

We have found the skulls of the "former ones," and we know their works long before 3000 B.C. It is as their own poets have said. We know not who was good, or who was evil among all the dead found by us there. Every one of them lay buried with all the accoutrements of this life. Beside them were found the jars, cups, and plates by which they had been provided with food and drink for their long journey to the lower world. The types of jars and eating plates found at Kish afford entirely new material in the history of ceramics. The rude representation of the bust of the great mother-goddess on the handles of the jars is that of Ninharsag or Innini of Harsagkalamma, the spacious and ancient temple which stood just east of the palace itself. But, unlike the palace, this temple was restored, and its older buildings built upon in every age to the end of Babylonian history. In fact, it gave its name to this part of Kish, which was known as the city of Harsagkalamma in the days of Nebuchadnezzar and Darius.

The results of the first three years' work of the expedition speak for themselves in the volumes already published. They abundantly justify the efforts which have been made, and repay many fold the generosity of our patrons. Mr. Herbert Weld, Litt.D., of Lulworth Castle, who supports the expedition on behalf of the University of Oxford, and the Trustees of Field Museum of Natural History deserve the gratitude which scholars of all lands feel toward them. As the Director of this Expedition it is my pleasant obligation to speak of the un-failing courtesy I have received at their hands from the beginning of my organization and throughout the three years' work now brought to a close.

STEPHEN LANGDON,

Professor of Assyriology.

Jesus College, Oxford, October 6, 1925.

A SUMERIAN PALACE AND THE "A" CEMETERY AT KISH, MESOPOTAMIA

PART II

INTRODUCTION

This publication deals with a large Sumerian building of very early date, with a full description of its purpose and contents. It was late in December, 1923, that Lieutenant Colonel W. H. Lane was particularly struck with a mound to the south of the high and important mounds called by the local Arabs Ingharra. Its surface was covered with broken pottery, bricks, and flints, all of very early date. Two gangs of natives were, therefore, set to work on the mound to determine as quickly as possible what lay within it. In the course of the first day a burial was completely cleared. It contained pottery of an entirely new type, and more men were at once put at work to make a more extended investigation.

The mound, which we call "A," has no local name. It really belongs to the Ingharra group of mounds, from which, about 70 m to the north, it is separated by an alluvial valley rising gently to the west which has been cut by centuries of winter rains. It would seem that mound "A" and the Ingharra mounds were once continuous. Work was begun on the northern side of the mound and with the addition of more men gradually spread around to the east. It was from the east that we made our great attack. In the course of a few weeks we had completely uncovered a large façade and stairway constructed of a very early type of plano-convex brick, which proved beyond doubt that beneath us we had the remains of a very important building. The excavation of "A" was discontinued for the hot months at the end of March, and was resumed in October of the same year. The whole of the building beneath the mound was completely cleared by the end of March, 1925.

In our first season (1923-24) I was ably assisted by Colonel Lane, who supervised this site as well as another when I was not present. He also cleared many of the graves and assisted generally in the routine of the excavations. In our second season (1924-25), Mr. D. T. Rice took the place of Colonel Lane and, being a trained anthropologist, undertook the clearing and recording of all the graves. This arrangement left me free to concentrate on the building.

The history of the site is briefly as follows: The building with extremely thick double walls and a stairway, which lies to the north on the plan (Plate XXI), is the original building. It is entirely constructed of unbaked plano-convex bricks of a small size, whose dimensions are 23 x 15 x 3.50-6 cm, the bricks of both foundations and upper walls being exactly similar. The proximity of this portion of the buildings to the Ingharra mounds also would suggest that it is of an earlier date than the rest. At a later period—it does not seem to have been

long after—the building was enlarged by erecting an annex to the south of it. It will be seen on the plan that this annex or rather what remains of it is strongly fortified. There are towers at intervals upon its double wall. The annex also is constructed of bricks of an early type which measure 21 x 15.50 x 4.50-7 cm and, though its walls are thinner than those of the building to the north of it, it would seem from its appearance to have been put up in more troublous times. It is obviously more capable of defence than is the first building.

Whoever added this annex to the palace also slightly altered the design of the original building. One of the main entrances to the earlier building was by the stairway toward its eastern end. Owing to a rise in ground levels, the builder of the annex found that this stairway could no longer be used conveniently. He altered it by building a flanking wall on either side and filling in the space between to form a ramp. The fact that this ramp was a proper feature of the restoration is proved by the filling being composed of a material which seems to have been used both for this building and its annex, namely, large lumps of river-clay.

Both buildings were evidently assaulted and sacked, possibly on more than one occasion, and the site seems to have been abandoned, except at the period when a few small buildings were erected over the ruined palace. These buildings are shown in the skeleton plan of the palace (Plate XXII). They most probably occupied the site just before or during a period when the mound was used as a cemetery, for none of the many graves were found beneath their walls.

The numerous graves found in the mound were rich in pottery and other objects. They were all of a considerably later date than the palace beneath them, as is proved by the fact that many of the burials were actually on the denuded walls of the old palace. In many cases, the walling of the palace had even been cut away when the grave was dug. From the objects recovered from these graves, it would seem that they belong to the period of Ur-Nina or Eannatum of Lagash, which according to the Weld-Blundell prism was about 3150 B.C.³ As nothing was found in the palace itself to date it with any degree of certainty, we have to fall back upon the evidence supplied by the cemetery above it. We date it, therefore, provisionally, as 3500 B.C.

Of later date than the graves are a few bits of walling which are linked up by their brickwork with the period of the first dynasty of Babylon. These fragments seem to have had no real connection with the mound. They probably formed part of a boundary wall. After this, the mound seems to have been completely abandoned, though, judging from the amount of broken brick strewn about, the western portion seems to have been used as a brick field in Neo-Babylonian times. It is possible also that the higher portion of the mound above the ruins of the palace was once occupied by small houses which have been entirely denuded away. Evidence of their former existence remains in the shape of drains made of cylindrical sections of pottery, some of which penetrate as far down as the foundations of the palace beneath. The close proximity of the extensive mounds of Neo-Babylonian date which we called "W" will explain this later use of the "A" mound.

Only three burials of Neo-Babylonian date were found in the "A" mound (burials 4, 111, 114), and there was one which contained several bodies associated with objects of the Greek period. These four burials close the history of the mound, as far as it can be traced through the objects found in and upon it. It is unfortunate that such a fine building could not have been completely recovered. The plan will show that the southern portion of the annex has been entirely denuded away. I am not at all certain, however, that the building extended much farther in this direction. The northern and eastern portions of the palace proper are also missing from the plan. These have been entirely swept away by the rains and winds that cut the valley between "A" and Ingharra,⁴ a fact to be greatly deplored as it is in this portion that one would expect to have found the royal quarters, and with them satisfactory evidence for dating the building. We cannot, however, make much complaint; for a palace of such size, despite the fact that it was entirely constructed of crude mud bricks, has never before been found and excavated in Mesopotamia.⁵

The method adopted in planning the building was as follows. Before excavation the mound was pegged out into squares of 15 metres. The walling of the palace that lay inside each square was surveyed from one of the corners of the square, the nearest convenient point being always taken. This system allows of the greatest accuracy when a theodolite is used. It is also convenient when walls at the bottoms of deep holes, which cannot easily be reached with a tape, have to be tied in. The squaring shown in both plans of the palace is identical with that used on the site.

The levels of all burials and objects of importance were taken with a proper instrument before anything was removed. This would seem to the uninitiated to be a somewhat wearisome task, but it was not really so. The level was set up early each morning and remained ready for use during the whole of the day. When an object or grave was discovered, it was only the work of a few seconds to ascertain its exact position and level and to record it temporarily either on the object itself or in a notebook. In this connection I should like to take the opportunity of thanking the Director of Railways and the Director of Surveys of the Government of Iraq for the kindly loan of theodolite and level.

The following system of ganging the workmen was adopted for our work on mound "A." Each gang numbered nine in all, three men (a pickman and two shovelmen) and six boys. Nearly all the pickmen were natives of Kuwairish, a village close to ancient Babylon, and most of them had had a certain amount of experience with the Germans digging at Babylon before the war. The shovelmen were local Arabs, as were also the basket-boys. The advantage of "ganging" is very great. The pickman is entirely responsible for the work of his gang; if he cannot keep order among them, he is replaced by another man. Thus the position of pickman is a responsible one, and carries a certain prestige as well as extra pay.

In our early work at "A," considerable difficulty was experienced in finding the actual faces of the walls, which were all of mud brick and frequently in very bad condition. The bricks were generally made of very inferior clay; and when

account is also taken of the fact that the filling of the chambers, courtyards, etc., was of identically the same material as the bricks, consisting as it did of walls that had been washed in and consolidated by countless storms of wind and rain, it is a marvel that we were able to do as much as we did. Before we and our workers had obtained experience, we found that in some cases we were cutting into walling instead of into filling, the latter frequently being harder than the former. Fortunately, no irretrievable damage was done, but an excess of caution on the part of some of the men led to their claiming that there was no doorway into chambers that were being excavated. In such cases, one man, who seemed to have quite a flair for that particular work, was put to the task of finding the doorway, and during the latter part of last season he did nothing else.

We finally devised a method of clearing chambers, which seemed to be the best for mud-brick buildings of an early date. An experienced man will first try to find the limits of the chamber from above for a short distance down. When this has been done, he will endeavor to get down to the foundations of the chamber in the middle and feel for the walls from this point. As the foundations are thicker than the walling above them, there is little risk of damage to the walling itself. As the walls are set in from the foundations at practically the same distance in all chambers, the pickman can tell within a few centimetres when he is coming upon them. In most cases, the foundations are well preserved, and bricks are readily extracted from them for measurement. This method, coupled with the fact that the laborer works horizontally against the face of the filling instead of vertically downward, assists in the preservation of pottery, tablets, etc., which are liable to damage from the pick when approached from above.

Two plans are given of the palace at "A" (Plates XXI and XXII). The first shows the early building with its annex separated from all extraneous matter. The second plan gives the position of all the later walling found on the site together with the exact position of each of the graves of the cemetery. This plan has also been used to mark the positions of the various sections shown in Plate XXIII. To avoid confusion, a second datum line has been drawn in dots and dashes 5 m above the zero-datum line, which, of course, passes through the thicknesses of walls and foundations. When a level is mentioned in the text, it is invariably taken from the zero-datum line.

In practically every case where an object is mentioned in the text, its registered number and the museum to which it was sent follow it in parentheses, as, for instance, Reg. No. 4321; Field. This will enable the reader to trace the final resting-place of every object, and by means of its number to procure further information about it, if he should so desire.

In the line drawings, the registered number of each object is also marked on the object. On the left is given the number of the burial from which it came. Those objects without a burial number were found lying in the debris mound unaccompanied by other objects.

TOPOGRAPHY OF KISH AND HARSAGKALAMMA

The map appended to this volume includes that portion of Kish which extends from the ruined mud-brick buildings, dated to the period of the first dynasty of Babylon, that lie on the western side of the Ziggurat of Tell Ahaimir, to the complex of mounds away to the east, known locally as Tell Ingharra. It has been adapted from the air-map made by the Royal Air Force, by kind permission of the Air Vice-Marshal, in February, 1924. Though this air-map has proved of very great value in our work, it could not, for want of clearness, be included in this volume without alteration. And this is, of course, due to the peculiar characteristics of the country around Kish, which is entirely bare of trees and crops, except for one season in the year, and bare of mounds of imposing height, excepting Tell Ahaimir and Tell Ingharra.

It is the intention of the expedition to publish this map with every future volume that is issued, adding to it in each instance, the outlines of buildings that have been completely excavated, and are subjects of the volumes issued. Several excavations made by us at "T," "Z," "P," and "W" are incomplete, and it is useless to include these buildings in the map before they have been finished and described. "A" falls in the former category, and its plan, therefore, will be found on the map.

The contour lines of the mounds must be regarded as provisional only, for no systematic levelling has yet been done, with the exception of that at mound "A." To level properly the whole of the enormous site of Kish and Harsagkalamma would require a very considerable amount of time, which the members of the expedition with more urgent work to perform have not yet been able to afford. After a careful tracing of the air-map had been made, each mound was visited in turn and the contours were filled in by hand, where these were not sufficiently clear in the tracing. The results are, we think, sufficiently accurate to allow of their being placed before the archaeological world. Our camp "K" was situated just below the southern corner of the Ziggurat at Tell Ahaimir "Z", on the edge of a flat stretch of ground, which is one of the lowest areas of Kish and its neighbourhood. Our zero-datum line, to which all the levels at Kish, which have been and still remain to be made, are to be referred, was fixed within the confines of the camp "K".

The summit of Ziggurat "Z" at Tell Ahaimir is about 19 m above our zero-level and the lower mounds that surround it average 5 m above. The Ziggurat has a core of burnt brick which is dated to the period of the first dynasty of Babylon and an outer casing of sun-dried brick of the period of Nebuchadnezzar. We do not yet know with certainty if earlier buildings than those of the first dynasty of Babylon lie beneath the Ziggurat and its temple.

For a considerable distance to the west of the Ziggurat, there are numbers of mounds of varying heights and sizes, all linked together by lower mounds.

Those which strictly belong to the Ziggurat terminate at "T." A small area of this portion of Tell Ahaimir has been excavated, but much remains to be done before the results can be published. The date of this area, as proved by tablets and other objects found there, is the first dynasty of Babylon. The buildings are all constructed of sun-dried brick, and are paved only here and there with burnt bricks. The fact that this site was occupied for a considerable time is proved by the varying sizes of bricks used in its construction. They are all rectangular in shape, averaging 27 x 18 x 9.50 cm, excepting some bricks of the Neo-Babylonian date, which are square.

The small mound "X" stands 3.15 m above datum. Beneath it were the remains of a small fort, which was discovered and excavated by Colonel Lane. The bricks of which the fort was built were all sun-dried and average 33 x 33 x 6.50 cm in size. This fort is presumably of the period of Nebuchadnezzar II, for its bricks agree in size with those found in the mound of Neo-Babylonian period at "W." No wall has so far been found in connection with this fort, but slightly higher ground to the west of this building has yet to be examined before any definite statement can be made on this point.

A conspicuous mound about 3 m high, a little to the S. W. of our camp at "K," was examined in the hope of finding a wall that might have been connected with the fort; but no trace of building was found beneath this mound. It seems to be merely an accumulation of the debris thrown out of an ancient canal that lies in its vicinity. Our usual path to mounds "W" and "A" is marked on the map by a ladder-line. It will be convenient, therefore, to visit the various sites, on paper as in practice, along this line.

The two mounds "Y," which are roughly divided by an ancient canal, are of little interest archaeologically, judging by their surface remains. In no part are they higher than 2.60 m above datum, and their average height is only 70 cm to 1 metre. They are covered with late pottery with a sherd here and there of bright blue glaze associated with the Parthian period. No trial cuttings have as yet been made in this mound, which is used as a camping ground by Beduins on their journeys to and from the south. The mounds "I" and "J" are much more important. No work has as yet been done there, but the fact that they cover important remains is proved by their height and size. Their surfaces are a mass of fragments of late pottery with a trace here and there of blue Parthian glaze. I am inclined to think that nothing earlier than Neo-Babylonian material will be found in these mounds, for there are no traces of pottery of an earlier period in the cultivation immediately around them. They appear to me to cover too large an extent of ground to be forts or other military works, but this point can be settled only by actual excavation.

Mound "W" is of immense size, and chiefly consists of buildings of the Neo-Babylonian period. From this mound were extracted many tablets of both the Isin and Neo-Babylonian periods, but up to the present nothing of earlier date. The surface of the mound is covered with pottery of a late period, ranging from Nebuchadnezzar to the early Arab period. It would seem to have been a resi-

dential quarter. There are numbers of large houses situated, chiefly, in the southern part of the mound. This mound is surrounded on all sides by cultivation, except to the east, where it is bounded by an ancient canal. Its highest part is south and west and this portion rises fairly steeply from the cultivation to a height of nearly 5 m (4.80 m) above our datum line. The summit of the mound is far from level. It is studded irregularly by small knolls which cover the larger buildings that lie beneath. These knolls range in height from 1 to 2 m above the more level portions of the mound. Toward the north and east, the mound gently descends until it is lost in the cultivation or the canal. The mound may be described as roughly pear-shaped with its apex pointing toward the west. This latter portion is thickly covered with numbers of broken bricks, some of which were overfired in the kiln. From the quantity of these bricks I am inclined to think that this part of the mound was at one time devoted to brick-making. The level of the cultivation around mound "W" averages 1.50 m above our zero level.

The three canals which divide "W" from the complex of mounds locally known as Ingharra are of varying periods. The western one is the most recent. It appears to have been cut after the "W" quarter was built; for, it will be noticed, it bends to avoid the mound, opposite which the bed of the canal averages 3.14 m above datum line. The unequalness of the bed, especially of that portion which curves round the mound, suggests that then, as so often now, houses were crowded too close to the canal. I would ascribe the date of this canal to the Neo-Babylonian period. Tall heaps of the silt thrown out from its bed during repeated clearances line its banks, which in places still stand over 3 m high above the bottom of the canal.

The two canals to the east of the one just described are in various stages of obliteration. The middle one is still clearly defined, but is not so prominent as the canal close to "W," and the eastern one is almost entirely denuded away. It is impossible in the present state of our knowledge to assign a period to these two ancient waterways.

The reason for these three canals being so close together is as follows: After a canal has been in use for some time, and has been repeatedly cleared of silt, the latter forms great mounds on either side of it, so that it becomes increasingly difficult to remove the silt. When this state of affairs is reached, it is more economical to construct a new canal alongside than to go on clearing out the older one.

Crossing the remains of the three canals, we reach mound "A," of which the greater part has now been excavated. Only the lower and flatter portion to the west remains unfinished. This part, however, is strewn with quantities of late pottery and bricks, whose fused surfaces show them to be throw-outs from a kiln or kilns. I am inclined, therefore, to think that this part of the mound was concerned solely with works of utility.

The highest portion of "A," in the centre and slightly to the east, was 5.84 m above zero level and the northern slopes of the mound were considerably

steeper than those to the south, owing to denudation not so badly affecting some thick walling there. The cultivation to the south-east of the mound averages 1.90 m above our zero level, and to the east of it, about 2.50 metres.

Between "A" and the large complex of mounds marked "B," "D," "E," "F," and "G" is a broad depression which descends from the canal gently toward the cultivation at the east. This valley has been cut out by the winter rains of ages past, and in consequence of its formation a large portion of the Sumerian palace at "A" has been swept away. This depression is clearly seen in two photographs (Plates XXIV, Fig. 2, and XXIX, Fig. 3).

The mound "E" is the highest portion of the series of mounds which are locally known as Tell Ingharra.⁶ Its summit is 18 m above zero level. A small trench cut in the side of this mound revealed a certain amount of burnt limestone, which suggests that perhaps this Ziggurat—for such from its shape it almost certainly is—was at one time covered with this material. North-east of this Ziggurat and joined to it by a shoulder is a smaller Ziggurat "F." A little work undertaken there last season proved definitely that it was once a temple-tower built of plano-convex bricks over an even older building. Both these Ziggurats are shown in Plate XXIV, Fig. 2. The summit of this smaller Ziggurat is 16.28 m above zero level.

"B" is a large mound, the highest portion of which is 9 m above datum. A trial trench made in it revealed sun-dried brickwork of the time of Hammurabi over older walling, which was proved to be of the early Sumerian period by the numerous pieces of inlay of mother-of-pearl found at the base of the walls. These older walls themselves were in too bad a condition for bricks to be extracted from them for measurement. This mound must cover a very important early Sumerian building.

Mound "C" is roughly 10 m above datum. Shallow cuttings made here uncovered a wall whose bricks resembled those in the ruins of Tell Ahaimir; and the building is, therefore, presumably of the period of the first dynasty of Babylon. It is not yet known what lies still farther beneath.

Between the mounds of Ingharra and "V" there is a comparatively level piece of ground with a slight decline toward the N. N. E. A trial trench cut here showed the soil to be of a peculiarly fine sandy nature, such as would be deposited by the water of a canal. It is quite distinct from the ordinary alluvial soil, and though no other indication of it now exists, it is quite possible that a canal once flowed alongside of Tell Ingharra.

The horseshoe-shaped mound "V" is very curious. Its top which lies roughly 9 m above zero level is fairly level. No experimental cuttings have as yet been made there, but M. H. de Genouillac in 1911-12 found that it was constructed of bricks measuring 31.50 cm square by 10.50 cm thickness. He thinks that this building is a fortress of late date, with which conclusion I am inclined to agree.⁷ This mound is locally known as Tell el-Bandar, or the "mound of the harbor," because of its curious shape like an elongated horseshoe. The word *bandar* ("harbor") is borrowed from the Persian.

The large group of mounds marked "H" is likely to prove very interesting. The highest part is 4.50 m above zero level, and the mound, or rather, group of mounds, is broken up here and there by rain-cut valleys, so that its surface is very uneven. The average level of the cultivation around these mounds is 1.50 m above datum. Some tentative work here revealed walling of sun-dried bricks, which appeared to be of very early date; but owing to their condition, it proved impossible to extract any bricks from the walls for measurement. I am inclined to think that this site represents the poorer quarters of the city in very ancient times, and that it will be here that particulars and ground-plans of the dwellings of the people of that time will be obtained. On the surface of this mound there are fragments of early spouted ware, handled jars (type A), sickle flints, and broken stone vessels. The mound seems to have been practically abandoned in later days, though on the top was found a quantity of plaster moulding of the Greek period. There was so much of it that it must have formed part of the decoration of a large house whose sun-dried bricks have disappeared, leaving the harder plaster behind. There were also a few bricks of Nebuchadnezzar's time and a little blue Parthian glaze.

The large area marked "P" on the map is a very wide plain whose height above our zero level has not yet been ascertained and might provisionally be put at about 2 metres. In this area there is a very large number of buildings, of which we have partially uncovered two. One of these is apparently as large as the palace which is the subject of this publication.

As far as can be made out from the indications on the surface of the ground, the whole extent of this large area, as far as the cultivation around it, is one mass of buildings. Walls and even doorways are in several places clearly mapped out for a day or two by differential drying after rain. Of the two buildings partially excavated the walls average 30 cm in height, to which must be added about 1 m of foundations. The size of the bricks is 24 x 16 x 4-6 cm, which is slightly larger than those found in the palace at "A." Colonel Lane and I consider the buildings partially excavated in this area to belong to an even earlier period than the palace at "A." They may perhaps be assigned to the beginning of the second dynasty of Kish.

I. THE SUMERIAN PALACE AT MOUND "A"

DESCRIPTION OF THE PALACE "A"

The palace will be described in three sections—the original palace, the eastern wing and stairway, and the annex. It will be convenient also to regard its sides as exactly facing the cardinal points of the compass, though, as will be seen in the plan, this is far from being actually the case.⁸ The outer portion of the western side of the palace was somewhat difficult to trace. The wall was only 110 cm high in the middle, though the debris covering it was considerably higher. This can hardly be accounted for by denudation, and the probable explanation is that the wall was breached at this point by the enemies of Kish who stormed and overthrew the palace. The length of the wall is 40.90 m, and its breadth 3.50 metres. This latter measurement, however, does not include the footing, or foundation, which is 4 m thick. At intervals of 6.20 m there are unusually shallow buttresses, 2.10 m wide, which project only 15 cm from the face of the wall. Similar buttresses or projecting towers on the northern face of the wall may be seen in Plate XXX, Fig. 3. They all show signs of much weathering, and it is a debatable point whether they did not once extend out as far as the face of the footing of the wall. If so, they would have been nearly 40 cm deep. It will be seen that this magnificent wall extends around the building on all four sides, varying but little in thickness, except to the south, where it is in places 3.90 m thick.

The level in centimetres of the wall varies slightly, as follows:—

	N. W. Corner	S. W. Corner	N. E. Corner	S. E. Corner
Top of wall	Plus 129	Plus 111	Plus 88	Plus 168
Top of footing	Plus 70	Plus 40	Plus 31	Plus 13
Base of footing	Plus 22	Minus 74	Minus 39	Minus 62

Both on the western and eastern sides, the building declines slightly to the south. This declination is noticeable on the surface of the ground outside the western side of the building, and shows that, though the ground was carefully prepared before building, it was not considered absolutely necessary to obtain a perfect level. For a building of mud brick the results must be considered as being extremely good; the errors are quite imperceptible to the eye.

Plate XXXIV, No. 2, shows a conjectural restoration of the western side of the building on the model of a sculptured scene showing an Assyrian army attacking a fortress.⁹ Although the fortress is dated to about 700 B.C., there is every reason to think that the Sumerian palace of 3500 to 3000 B.C. presented the same features, namely, battlemented towers linked together by a curtain wall, overlooked by an inner building which also had fortified towers. The height of the building in the restoration is, of course, a surmise. It may have been higher, but could hardly be lower, for in the latter case there would have been considerable

danger from scaling parties. The shape of the merlons has been copied from the Assyrian representation, but it is quite possible that in Sumerian times they were square or even rounded. To make a restoration of a building is always an invidious task, but it serves to illustrate a conception of its probable appearance far better than many lines of print.

The plan shows that a corridor, 2.30 m wide, runs round within the great outer wall of the original palace. The inner wall of this corridor varies in thickness above ground from 2.50 to 2.70 m; the width of its foundation is 3.15 metres. Nowhere along this wall is there any entrance to the chambers within, except at the northern end of its eastern side, and on the south to a single chamber only. A passage of such nature can only have been intended for protection, and it can best be described as a kind of fosse between the outer and inner lines of defence.

Particular attention was paid to the debris found in this fosse in the hope that objects found in it might provide a definite clue to its use. The filling was, however, singularly clean. With the exception of one or two burials, no objects were found to suggest that the fosse had ever been used as an ordinary passage. It is probable that this above-ground fosse was always open to the sky and that gangways thrown across it at intervals gave access to the top of the outer wall. In the event of the outer wall being scaled or battered down, these gangways could have been withdrawn or thrown down, and the defence of the building continued from the inner wall or ward.

In the case of an assault, the narrowness of this fosse would be of great advantage. A breach in the outer wall would probably not be of any very considerable size, owing to its thickness. It would, therefore, only admit comparatively few of the invaders at a time, who would find themselves confronted with a still higher wall than the one they had battered down, with the additional disadvantage of having no space in which to manoeuvre or to use scaling ladders. In this predicament, they were doubtless assaulted by every weapon of offence and defence known to the Sumerian of the period, and must have had an extremely unpleasant time.

That something of this sort actually happened here is proved by the fact that the middle of the western wall shows signs of having been breached in several places. The inner wall practically opposite these breaches, near the southern end of chamber 2, is also lower than elsewhere. It is also interesting to observe that the fosse running along the northern side of the building was blocked up near the middle of its length with bricks measuring 20.50 x 13 x 3.50-6 centimetres. This obstruction was evidently hurriedly put up during a lull in the attack after the outer wall was breached. A very similar blocking up of the passage with bricks of the same size is to be found in the south-east corner of the building. These obstructions effectually sealed the entrances of the interior and eastern portions of the palace, but could not have been of any avail when the second line of defences was broken down. It should be pointed out here that the bricks used in building these obstructions correspond in size with the bricks used to build the great annex to the south of the original palace.

The great interior courtyard (6) measures 14.50 m from north to south and 15 m from east to west. There is no doubt, I think, that it was open to the sky; it would be a most difficult place to span without the assistance of columns, and of columns of the same date as the court. The walls, except that on the west, are in an excellent state of preservation. A curious feature is the presence of what seems to have been a semicircular buttress (Plate XXX, Fig. 2) projecting from the north wall of the court. This was constructed of bricks measuring 20 x 13 x 3-6.50 cm in size. It was a later addition to the wall, for the base of the buttress rests upon the footing. Its real use is difficult to understand, as the wall behind it shows no signs of having needed such a support. Pieces of gypsum plaster about 1 cm thick were found just above the footing here, but they can hardly have formed part of the paving of the court, as they were found only in one spot. They had probably fallen from the walls, especially as they are quite thin.

On the eastern side of the court, part of a later column of mud brick still stands, measuring 70 cm in diameter and constructed of bricks whose dimensions are 23 x 15 x 4-7 centimetres. These bricks are practically the same size as those used in the walls of the court and also of the whole building. Yet the base of the column does not go below the footing of the walls, which proves that it was not included in the original design of the building. It is possible that there was once a kind of portico here the roof of which was supported by three columns. For with only the column in question—which it should be noted is exactly central—the span on either side (7.25 m) would have been too wide to be properly bridged by a beam.

This courtyard appears to have been once paved with burnt bricks—a necessary procedure as it was open to the sky. Remains of this flooring were found in the south-east corner, made of well-burnt bricks measuring 27 x 16 x 5-6 centimetres. By their flatness and their unusual size we are led to believe that these bricks were especially made for flooring purposes. They were laid three deep in mud with a little bitumen here and there,¹⁰ and the average thickness of this part of the flooring was 21 centimetres. Whether a thickness of three bricks was used to pave the whole court or only this one part it is impossible to say. This courtyard seems to have been open for some time, as it was filled with large masses of brickwork, recognized as such by the bricks in them. Its walls must once have reached to a considerable height with the result that they eventually toppled into the court, but not before most of the paving had been removed—doubtless to be used elsewhere.

Doorways in the four sides of the court lead into various chambers which were perhaps used as store-rooms; for, with the exception of chamber 14 on the east, none of the doorways was provided with recesses for doors. These chambers which are of little interest were paved with either baked or unbaked bricks.¹¹

Measurements of the following are given for reference, beginning at the north of the court: chamber 4, 11 by 3.20 m; chamber 3, 11.80 by 3.20 m; chamber 2, 11.80 by 3 m; chamber 17, 10.90 by 3.10 m; chamber 18, 10.50

by 2.90 m; chamber 19, 6.60 by 3 m; chamber 20, 7 by 4.40 m; chamber 7, 4.75 by 3.10 metres.

In chamber 18 there were traces here and there of a burnt-brick pavement, of bricks measuring 27 x 16 x 5-6 cm, the same size as those of the court. The paving of chamber 19 was complete; and again of bricks of the same size as those of the court. An unusual feature of this room was the brick lining to the walls, the wainscot thus formed consisting of bricks laid on edge, of which about 8 cm appeared above the level of the pavement. In this chamber also a limestone dish (Plate XXXVII, Fig. 1) was found broken into many pieces. It appears to be of the same date as the second occupation of the building.

Leaving the courtyard we now enter chamber 14, which measures 3.85 by 3.10 metres. Its walls show traces in many parts of having been heavily coated with a white stucco. A thick layer of charcoal was found just above what remained of a burnt-brick floor. The presence of this charcoal is difficult to understand; it must have come there before the pavement was robbed of its bricks. The walling at the west of this chamber is curiously thin as compared with the other three sides, and in it recesses were built to accommodate a door. It should be noted here that through this room alone could access be had to the great court from without the building.

Through a plain entrance at the north of room 14, a square chamber (13) is reached which measures 3 by 3.10 metres. Such a chamber as this, which guards the line of communication, as it were, between the courtyard with its chambers and the more important parts of the building on the east, may have served the purpose of a guard-house.

The next chamber (No. 15) shows some interesting features. On the floor was found what appears to have been a hearth, laid against the wall and protected from it by a number of burnt bricks laid on edge. On the east of the hearth was a low wall, 33 cm thick, standing 50 cm above the floor of the hearth. One would have expected a similar wall on the other side, but it was only represented by a single layer of plano-convex bricks. A photograph of this hearth may be seen in Plate XXXI, Fig. 3, but through a mistake it was unfortunately taken before a shallow basin made of broken pieces of plano-convex bricks and sunk below the floor of the hearth was cleared out. This was 35 cm in diameter and 20 cm deep.

On the badly wrecked paving of this chamber, two pieces of copper, which appear to be ingots, were found together with six water-worn pebbles, marked with lines, that were evidently used as weights (Plates XXXVIII, Fig. 2 and XLII, Figs. 10, 11, 12, 13, 14 and 15). The chamber measures 7.85 by 3 m and its northern wall shows conspicuous traces of having been much rubbed by people as they passed, doubtless avoiding the fire. It must be remembered that everyone going to the great court had to pass this way. This hearth may, of course, have been used for preparing food, but the presence of the copper ingots and the weights strongly suggests an armorer's shop. A big fortress-palace such as this would quite possibly have had a resident smith provided with the means of repairing weapons and other implements.

To the east is a small chamber (16), which has a recessing for a door. The dimensions of this room are 40.50 by 3.20 m, and it is paved with roughly made, badly baked bricks measuring 25 x 14 x 3-5 cm—an unusual size. The base of the wall was thickly coated with bitumen all around to a height of 25 cm above the paving, evidently to serve as a wainscot which would protect the mud walls from damp when the pavement was washed down.

A passage (9) runs north from chamber 15, with two rooms on either side of it. As in chamber 16, bitumen plaster was used as a wainscot, though there are no traces of its having been paved with burnt brick. On the west, a plain doorway leads into the connected chambers 8 and 12, about which there is nothing to record except that they were paved with unburnt brick and measure 3.80 by 3.70 and 3 x 36 m, respectively. Chambers 10 and 11 on the east were evidently of more importance. Chamber 10 measures 3.20 m square, and has a door on the side of the passage. No trace of a burnt-brick pavement was found, but the presence of a large amount of ash and charcoal suggests that wooden articles were at one time used or stored here. The walls in many places, especially on the west, show traces of having been coated with a thick white stucco. Chamber 11 measures 3.10 m square; its walls also were plastered with white.

A simple doorway at the end of passage 9 gives entrance to a long apartment (5), which was at a later period divided into portions. The walls of this chamber, though denuded down and covered by but a trifling depth of soil, were in a remarkable state of preservation. The eastern portion of the chamber bears very marked traces of burning on its walls, whereas in the western portion the walls were remarkably clean. Again it should be remembered that through this room alone could the court and its adjacent rooms be reached. A last desperate defence of the palace would have been made at this point. The floor of this chamber was of thin bitumen plaster laid over a paving of crude brick. At the eastern end of room 5, a plain doorway leads into the long passage numbered 22 on the plan—the passage that encircles the building on all four sides. For some reason, the eastern section of this passage was divided into two in the middle by a pair of buttresses which were evidently later additions, for their bases rest on the projecting footings of the walls. The bricks of which they were constructed were, however, of the same size as those of the walls. These buttresses resemble those in chamber 5, and were probably built for the same purpose—defence.

The sides of the passage were thickly coated with a bituminous composition to a height of 45 cm above the level of the floor. The only paving found was of crude mud brick. It is unlikely that there was once a burnt-brick pavement here; for, if it had been removed, the bitumen wainscot would have been damaged in the process. The southern end of the eastern section of passage 22 communicates with chamber 21 by an entrance which was never fitted with a door. This chamber, whose dimensions are 5.20 by 3.20 m, cuts right into the inner wall of the palace, reducing its thickness very considerably. Whether or not it was thought the resulting thinness of the wall might be a source of danger, a curious addition was made to it on its southern side. A strip of wall measuring 9.30 m in

length by 1 m in thickness was built up against it, the total breadth of the two walls being about equal to that of the inner wall that runs around the building; that is, the one into which the chamber had been extended.

The enlargement of chamber 21 seems to have been done at the time the annex was added to the palace; for the compensating strip of wall was built of bricks which measure 21 x 15.50 x 4.50-7 cm, and its base rested on the foundations of the wall against which it stood. The group of chambers lying to the east of passage 22 are of particular interest. The room to the north of chamber 26 and the end of the long passage have most unfortunately been entirely denuded away, so that it will never be known exactly how the original entrance to this huge fortress-palace was arranged. The means adopted for its defence must have been of great interest.

Communicating with passage 22 to the east is a large chamber (24) whose dimensions are 7.90 by 3.80 metres. It was paved with crude brick and had plain mud-plastered walls. Chamber 23, with which it communicates to the south, was paved with burnt bricks of two sizes, 24.50 x 17.50 x 4-4.50 cm and 23 x 14.50 x 5-6 cm, respectively. The use of two sizes of bricks in such a small chamber as this is curious. It suggests either that it was not at first intended to pave this chamber, or that the supply of bricks ran out. The larger bricks have rough projecting bases, which look as if the mould had been pressed into the clay instead of the clay into the mould. However, the bases are covered with traces of chopped straw, though this material was not used in the making of the bricks.

Chamber 27 into which 23 opens to the south is of curious construction. It cuts heavily into the great outer wall, which could hardly be part of the original design. The chamber was probably enlarged when the big southern annex was added to the palace, and this portion of the wall was no longer on the outside of the building. The enlargement was obviously for the purpose of making a doorway into passage 28.

This new entrance to the large western wing of the palace may have been made merely as a matter of convenience when the southern wall was covered and protected by the building of the annex. On the other hand, there is a possibility that it was a matter of necessity. It is quite conceivable that at some period, as yet unknown, a successful attack was made upon the palace, when entry was forced to the north of chamber 26. On the reoccupation of the palace, the breach may have been blocked up by a mass of masonry which also cut off the entry to the western wing, thus necessitating a new entrance through passage 28 and chamber 27. If this were so, the repaired breach has since disappeared with the whole of the north-eastern portion of the palace, and we are left in the empty region of speculation. Unfortunately, the walling here is much weathered; no bricks could be recovered in sufficiently good condition to be measured.

There is little of note about passage 28, except that its walls were plastered with mud and that it had a flooring of sun-dried brick. On the right-hand side of the passage looking north there was a recess in the wall, measuring 55 cm in length and situated 1.05 m above the floor. This recess was probably used for a

lamp to light the passage at night. No trace of smoke was found anywhere in the recess, but this was hardly to be expected after such an enormous lapse of time. On the west, the passage leads into chamber 25, the dimensions of which are 3.70 x 3.70 metres. This was evidently a chamber of some importance, as it was fitted with a door. Chamber 26 to the north was probably entered from a room which opened into the same passage, but its northern wall is unfortunately entirely denuded away. To the east of passage 28 and entered from a blind passage at right angles to it is the complex of chambers 29, 30, and 31.

Chamber 29 was most uninteresting; it was paved with crude mud brick, and had plain mud-plastered walls. Its dimensions are 8.10 by 4.10 metres. The chamber by which it is entered (30) had several interesting features. At the western end there were found three large pottery jars, of very coarse paste and imperfectly baked, which were coated with bitumen both inside and out. They were bowl-shaped with flat, thick rims, and were strengthened at intervals by a slight projecting ribbing which was roughly ornamented with notches made with the finger. These vats, which average a metre in diameter, were partly supported by plano-convex bricks placed around them on the mud floor to prevent their rolling. Another jar of the same size and kind was found in the north-east corner of the chamber (Plate XXXI, Fig. 2).

The middle of the room was heavily paved with thick plano-convex bricks which measured 23.50 x 14 x 4-5 cm and 25 x 15 x 4-5 centimetres. The majority of these bricks were plain, but a few had a single thumb-mark in the centre. The cement used was mud with a little bitumen here and there. The floor, despite great irregularity, seems to be of the same date as the walls of this chamber, but whether the jars are of the same date is difficult to say. The brick paving was in some places 72 cm thick, some of the bricks being on edge, others lying obliquely, and still others flat. The fact that the paving does not extend beneath the jars, being cut off here in a straight line, suggests that they were in place or their position decided upon before the bricks were laid. A considerable amount of white plaster was found adhering to the walls.

Chamber 31 on the other side of the blind passage also possessed many interesting features. They were, however, found disturbed by intrusive burials and kilns dating to about 3000 B.C. In the first place, four large blocks of limestone were found on the mud floor, two of which are so regularly placed with regard to one another as to lead one to suspect that this chamber was once paved with stone. The average thickness of these blocks is 17 cm, and their average length 78 centimetres. They were roughly smoothed, but no tool marks are visible. The level at which they were found—just above the footing—would also suggest their having been used for paving. At the south-east corner of the same chamber were the remains of a brick pavement, of which the bricks average 23 x 15 x 5-6 cm in size. It is difficult to understand the presence of remains of both brick and stone pavements unless the limestone blocks belong to an earlier and the bricks to a later occupation. The levels of both were practically the same (19 cm below zero-datum line).

A curious platform, 3.60 m long by 3.20 m wide, was found in the north-west corner of the chamber. It is entirely constructed of plano-convex bricks averaging 23 x 13.50 x 4-6 cm, laid nine courses deep. The wall against which the platform is set was also lined with bricks, four courses high and one brick thick. Mud was used for the mortar with bitumen in a few places, and exposed sides of the platform were heavily coated with bitumen. This platform may possibly have been a sleeping bench, as its height above the footing was 55 centimetres. Another alternative is that it was a stand for pottery. The fact that it is of early date is proved by burial 23 being placed upon it. When this platform was demolished to ascertain its structure, a well-preserved unbaked tablet was found beneath it, inscribed with very archaic characters. This tablet is shown in Plate XXXVI, Figs. 10 and 12. Chambers 29, 30, and 31 are bounded on the east by a wall 3.90 m thick. This wall corresponds with the outer wall of the palace and is evidently part of it, though how far it extended to the north it has been impossible to find out owing to denudation.

On the other side of this wall is what is perhaps the most interesting feature of the palace, namely, a flight of steps which must have led into the most important part of the building. Unfortunately, however, this portion of the palace has been almost entirely swept away by weathering. The steps are eight in number. The width of each tread is 31 cm and the height 15 centimetres. The total rise from the level of the pavement to the top step is 1.28 m and the width of the stairway 2.35 centimetres. The bricks forming the steps measure 20.50 x 13 x 3.50-5 centimetres. They were unglazed and laid in mud mortar. It was impossible to ascertain whether the stairway was built of solid brickwork or filled with rubble in the middle, for this would have entailed its partial destruction, and the information gained would be of little real value. The steps show surprisingly little wear, and they must have been covered with either wood or copper. The latter is the more probable, as it could be removed on account of its value without leaving any trace behind, whereas a wood or burnt-brick covering would have left some trace behind (Plate XXV, Figs. 1-3). On mounting the steps, a spacious entrance (34), 3.10 m wide, leads into a vestibule (33) of the same width, from which doorways open into other chambers and passages to east and west. Unfortunately, owing to denudation, no trace of the upper walling of that part of the building lying to the west and north of 33 could be found, though the foundations (denoted by dotted lines) are well preserved. On the east, however, three chambers (36, 37, and 38) with their doorways have been traced.

The walls of chamber 33 were found on excavation to have been beautifully plastered with white stucco and paved with burnt bricks measuring 23 x 14.50 x 4.50-6 cm, set in bitumen. Traces of bitumen on the top of these bricks suggest that bitumen was also laid over them. The walls of the chamber averaged only 40 cm in height; but we were fortunate in being able to recover as much as we did. Chamber 36 measures 9.50 m in length by 3.70 m in width. Its walls also were stuccoed, but there was no trace of a flooring of brick. The same is true of chamber 38 whose dimensions are 9.40 by 3.70 metres. The narrow passage

(37) from which this last chamber is entered is 2 m wide, and is lost by denudation toward the north. A large chamber (35) to the north of the vestibule was found only by means of its foundations. Its walls and doorways have long since disappeared, together with its contents. It was slightly to the north of this demolished chamber and just below the surface of the ground that the fragments of the fine inlaid plaque illustrated in Plate XXXV, Figs. 2 and 3, were found. This plaque is described in the chapter on the objects discovered in the palace. It is possible that it once formed part of the mural decoration of this chamber. Beyond were again found the finely worked fragments of mother-of-pearl inlay, of which also a full description is given elsewhere (Plate XXXV, Fig. 1).

It will be noticed that the walls on either side of the steps are exceptionally thick and massive. There must once have been towers here for the protection of the entrance. In addition to being stepped for enfiling purposes as well as for symmetry, these walls were ornamented at intervals by stepped recesses, which measure 40 cm in width by 20 cm in depth and end below in a shelf, 35 cm wide, at the level of the top of the stairway (Plate XXV, Figs. 2 and 3; see also conjectural restoration in Plate XXXIV, Fig. 1).

A most unusual feature was observed on the outside of the building to the east of the stairway. This is a buttress which follows the outlines of a deep recess in the wall here. It seems to have been provided to prevent this portion of the palace wall from falling outward. The bricks of which this buttress was made measure 20.50 x 13.50 x 3.50-5 cm, that is, they are exactly the same size as the bricks forming the stairway and the annex. To relieve this ugly, but perhaps very necessary addition, roughly formed window-like recesses were provided, averaging 24 cm in width by 13 cm in depth by 40 cm in height. These, as will be seen from Plate XXVIII, Figs. 1-3, were arranged in rows, three of which are preserved in the middle portion of the buttress. Each row is 57 cm distant from the one above or below it, and the horizontal distance between the recesses averages 78 centimetres. For some reason or other, which it is difficult to fathom, each recess was completely filled up with burnt bricks, whole and otherwise, and then plastered over with mud to conceal them. The bricks thus used measure 21 x 14 x 3.50-5 cm, practically the same size as those of the buttress itself and the stairway, and all are probably of the same period.

It is possible that this buttress, which is very badly built, was constructed by an untrained mason. Unable to copy the stepped recessing used for decoration he may have substituted a design of his own, which not being approved of, or being weakening to the buttress, was eventually concealed. All these recesses were found plastered up, and were cleared for thorough examination, one only being left with the bricks in position for the purpose of illustration.

The base of the buttress is 165 cm below datum. Before it and 10 cm above the base of the buttress there were remains of a pavement of crude mud brick two courses high. The presence of traces of bitumen here and there shows that either there was once a layer of bitumen over the mud-brick pavement, or that it was covered by a layer of burnt brick set in bitumen. Fragments of similar paving

were found elsewhere in the large open space before the stairway of the palace. A portion of this paving may be seen in the foreground in Plate XXV, Fig. 2.

The size of the bricks, averaging 20.50 x 13 x 3.50-5 cm, of both stairway and the walling in its vicinity is difficult of explanation. These bricks agree in size with those used in the great annex to the south of the palace to be described below. At first sight it would appear from this fact that the annex and the portion of the building which includes the stairway are of the same date, both being later additions to the palace. If we turn to the level for corroborative evidence, we find on examination of the section along line E-F (Plate XXIII) that the matter turns upon whether the footing of the colonnade was part of the foundations, or was above ground level and intended to be seen. If the latter were the case, then annex and stairway might well be of the same date, but the section C-D shows the footing of the pillars actually to be part of the foundations of the annex, and the explanation of the bricks of the two buildings being of the same size must therefore be sought elsewhere. The annex is presumably of later date than the stairway, being higher in level, and the regulation size of bricks probably remained unaltered for a considerable period of time.

In connection with the above, the southern face of the great outer wall of the original palace already described will perhaps be helpful. The wall, before the annex was built alongside it, must have been exposed—perhaps for a considerable time—to a great deal of weathering by the strong dust-laden winds from the south-east. When the annex was built, the weathered face of the wall formed one side of the passage between the two buildings; and to make both walls of the passage alike the builders of the annex added a thin facing of sun-dried bricks to the older wall. The bricks of this facing measure 20.50 x 13 x 3.50-6 cm, and are of exactly the same size as those used in the building of the annex—another proof that the latter was of later date. This brick facing rested upon the footing of the older wall and projected beyond it for 20 centimetres. The facing was removed with ease throughout its length in the excavation of the building. Its average thickness was 47 cm, but owing to the weathered condition of the older wall it was thicker in some places than in others.

The passage between the two buildings was blocked up at the western end by a mass of sun-dried brick which appeared to have been set slightly into the wall north of it for the purpose of bonding. This mass is rectangular in shape and measures 2.75 m E.-W. by 2 m N.-S. The size of the bricks used in its construction was 21 x 13.50 x 3-5 centimetres. Here, no doubt, there was once a door by which perhaps a privileged few were allowed to enter instead of having to go right around the building. This door was guarded on the south by a tower which enfiladed it. That it was recognized that such an entrance, however well it was protected, was a source of weakness is proved by the fact that when this portion of the palace was cleared, the door was found to have been blocked up, the bricks used being of the same size as those in the jambs of the door. Following along this passage, which was paved with crude mud brick and, therefore, had once been roofed in,¹² we found that it was also blocked at its eastern end, apparently at the

same time as the doorway was bricked up. A little farther to the east there is a thin wall across the passage with an entrance through it on the north. The foundation of this wall is 1 m wide, and it must be part of the original design of the annex. The passage then continues until a very narrow entrance is reached, whose constriction is the result of the projection of a tower of the eastern wing of the building. Close to this entrance was found a large block of limestone of irregular shape measuring roughly 74 cm in length by 45 cm in its widest part and 10 cm in thickness. Its upper and lower surfaces are fairly flat and show natural cleavage. This block closely resembles the similar blocks on the other side of the wall in chamber 31. They possibly all formed part of a stone paving outside the building, which was taken up and removed when the palace fell into decay.

The annex, as has been pointed out, is a later structure than the building to the north of it, and shows features not present in the older building. Taking its western portion first, it will be noticed in the plan that, though its walls were not so thick as those of the earlier building, yet it seems to have been more strongly fortified both as to inner and outer defences. The presence of numerous towers along both walls suggests that in later times more reliance was placed on archers and slingers than on walls of super-thickness. If this be correct, it shows that the warfare at that period was becoming more scientific and less a matter of brute force.

The thickness of the outer curtain wall was 2 m and it was provided on the outside with towers averaging 2.50 m in width and projecting 30 cm from the face of the wall. Narrower towers on the inside, with rather more projection, alternate with those outside (Plate XXXIII, Fig. 1). The inner ward averages just under 2 m in thickness, but is re-inforced on the outside by towers, of which the first two from the north are opposite the inner towers of the outer ward. Toward the south, there is a considerable thickening of the inner wall which can only mean that an unusually large tower was placed there. The space between the two wards (43) communicated by two entrances on the east with a fine columned hall.

Both the inner and the outer wards show signs of much burning, and a thick layer of ash covered the ground between. The walls were also in a very damaged state, and show positive signs of having been breached in many places. Hence it is clear that one of the main attacks on the palace took place from this quarter. The facts that the walls were so badly burnt and that there was a layer of ashes on the floor prove, in my opinion, that this corridor between the two wards was at one time roofed over unlike the space between the two wards of the building to the north. To the south of the entrances to the columned hall, a room (44) was divided off from the corridor by a comparatively narrow wall whose footing shows it to be part of the original design. The southern wall of 44 was only just discernible, and measured 1.60 m in thickness. A portion of it had been repaired with burnt brick—an unusual feature, which is, however, also found in chamber 31 to the north. Beyond this to the south all traces of walling have disappeared through denudation, and a large portion of the building has been lost forever.

The pillared hall (5) is perhaps one of the most interesting apartments in the whole palace. It measures 26.70 by 7.60 m, and is well built throughout. Down the centre there are four columns, measuring 1.50 m in diameter, three of which are exceedingly well preserved; but the one at the south could only be traced, for it was almost completely weathered away. The most northerly column now stands 1.80 m above the burnt-brick pavement, and the southern one just below the pavement, the four diminishing in height with the slope of the mound beneath which they lay (Plate XXVII, Figs. 2 and 3).

The bricks of which the columns are composed are unbaked and rhomboidal in shape, measuring 35.50 cm in length by 21 cm in width at their broader ends and 7 cm at their narrow ends. They are unusually thin, only 7 cm, and are flat on both sides.

They would seem to have been made expressly for these columns, and from their extraordinary thinness as compared with their size we must conclude that they were not brought from any great distance. The broader end of each brick was slightly curved to conform with the circumference of the columns, which was 4.50 metres. These bricks were made of a sandy clay without any straw, and mud cement was used. The distance between the columns was 4.50 m, the same as their circumference; but the distance between the end columns and walls is rather less. Between the third and fourth columns from the north there is a cup-shaped depression in the pavement, measuring 88 cm in diameter at the top and 50 cm at its base, which is flat. This basin is made entirely of burnt plano-convex bricks, some broken and some whole, and it is thickly plastered with bitumen inside. The top of the basin was flush with the surface of the paving into which it was built. The second column from the north was damaged on its western side by a burial (No. 46).

It will be noticed that these columns are not placed quite centrally down the axis of the chamber, there being an error of 40 cm in favor of the western side. The fact also that there is no footing to these columns suggests that they were a later addition. It was probably originally intended to span this chamber without the use of columns—an idea which had subsequently to be given up owing to the difficulty of procuring beams that were long enough. This chamber was at one time entirely paved with plano-convex bricks, patches of which still remain here and there, set in some places in bitumen, in others in mud. The bricks employed were of various sizes, measuring 24 x 16 x 5-7 cm, 23 x 16 x 4.50-5 cm, 23 x 14 x 4-6 cm, and 21 x 14 x 4-6 centimetres. Those of the last two sizes had a thumb-mark in the middle of each brick. In some places this pavement is only one brick thick, in other places no less than three courses were laid to get the proper level. This paving may have been done after the roofing was completed, so that it was thought better to level up the floor with extra bricks than to bring earth for the levelling from the outside. The levelling was good on the whole, the error between the different portions of the paving at the southern end of the chamber being only 8 centimetres.

The few bricks that remain of the pavement in the northern part of the chamber stand 27 cm higher than the paving at the south. Doubtless there was an intended slope toward the south that water for washing down the pavement might drain away. Search was made for a drain, but without success. This, however, is hardly to be wondered at considering that so much of the pavement has disappeared. Around the base of a portion of the third column from the north there appears at first sight to be a remnant of a burnt-brick casing. This, however, on closer examination proved to be part of the pavement. No trace whatever was found of anything that could possibly have formed a casing to these columns. It seems hardly likely, however, that crude-brick columns, as exposed as these were, were not protected by a hard covering, such as wood or copper. If wood was used, it would have been burnt with the building. Copper would have been stripped off and taken away as booty. It has also been suggested that these columns were covered with inlay set in bitumen composition; but if this system of decoration had been used, pieces of the inlay would surely have been found in the chamber, and of this, unfortunately, there was not a trace.

The purpose of this chamber is difficult to explain. Its proximity to the outer walls, I think, precludes its being a royal apartment, which would more likely be situated in the interior of the building both for safety and for privacy. I would suggest that this hall was a barracks for the palace guard, with the two doorways at the west to provide rapid access to the walls in the event of an attack. The fact that these doorways were unprovided with recesses for doors supports this suggestion and rules out the possibility of this hall being the private quarters of anyone of great importance.

Chamber 55, which is entered from the pillared hall and served as a passageway between it and the rest of the annex, measures 14.50 by 5.60 metres. It presents little of interest beyond the fact that a quantity of pieces of plaster were found scattered over the floor on a level with the top of the footing. The average thickness of these pieces, 2.50 cm, precludes their having been the plaster of the walls. They must be, therefore, the remains of a plaster pavement, which is borne out by a similar pavement being found in another large building at Kish of the same or possibly earlier date. The walls of this chamber were heavily coated with mud plaster, which was whitened. Lying on the ground of this chamber were three basalt querns in good condition (Reg. Nos. 1619-1621). Chamber 58, into which doorways led from both the large hall and chamber 55, was found in a very dilapidated condition, and its walls could only just be traced. No trace whatever of a pavement could be found, and if there ever was a burnt-brick floor in this room, it must have been entirely removed in ancient times. Giving access to chamber 55 from the east is a narrow chamber-passage (57), whose dimensions are 9.60 by 2.60 m and about which there is nothing of interest to report.

Chamber 60, which is entered from this passage to the south, measures 4.20 by 2.60 metres. Its floor is partly covered with burnt bricks, whose dimensions are 2 x 15 x 4-6 cm, with a rather pronounced convexity. There were traces of

very thin stucco on the walls, and several pieces of thick pavement plaster were found below the burnt-brick paving—a fact which suggests a second occupation. The adjoining apartment (59) was entered from another passage at the south which is lost through denudation.

The small hall (61) measures 10.70 by 3.70 metres. Though in a poor state of preservation, its walls show traces here and there of being at one time covered with a white stucco. For some reason this hall was divided into two portions, and the eastern end of the dividing wall rests upon the footing, showing that it was a later addition. A quantity of most interesting inlay was found lying along the foot of the northern wall of this chamber, together with numerous pieces of slate which once formed the background of the inlay. This inlay, which is described in the chapter on objects found in the palace and illustrated in Plate XXXVI, Figs. 1, 3-6, was associated with broken pottery of simple cuplike form and also more elaborate types, such as spouted jars. A small button of iron was found adhering to one of the slate fragments; it was pointed out to me by Colonel Lane before it was removed from its position (Plate XXXVI, at base of Fig. 2). This and two similar fragments found near-by are discussed in the chapter. It is certain that the strata here were untouched and that the iron was not a later intrusion. In the south-west corner of the hall there were the remains of a pottery drain consisting of four segments, each 37 cm high and 72 cm in diameter. Each segment had a thick rounded rim at the top and the bottom, and the thickness of the pottery midway between was 1.50 centimetres. The lowest section rested on the mud-brick floor of the hall. In removing this drain, the exceptionally well-preserved adze or hoe was found which is illustrated in Plate XXXIX, Fig. 2.

A small portion also of shell inlay lay in the middle of the chamber and along the northern end of the west wall. It would appear that it had fallen from the walls, but from what part, whether high up or low down, it is impossible to say. From the damage done to the animal figures of which the scenes were mostly composed there is every reason to suppose that the inlay was torn from its slate setting and maliciously broken up. Portions of it, for instance, figures of deities and kings, may even have been carried off. The position of this chamber in the palace, together with the portico before its entrance, would justify the assumption that it was a reception room for visitors of note waiting to see the royal occupant of the palace. The narrow passage 56, it will be seen, leads to four rooms which appear to have been used as store-rooms. The first of these (53), the dimensions of which are 6.70 by 4.10 m, has nothing of note about it, except that the bones of an ox, which were in a very bad condition, were found in the middle of the room, just above the level of the base of the footing.

Chamber 52 beyond measures 6.60 by 4 m and was paved with crude mud brick. An interesting feature was the presence in its north-west corner of a large vat made of coarse, badly baked ware of a greenish color, thickly coated with bitumen inside and out. The heavy rim averaged 5.50 cm in thickness and height, and the body of the vat was strengthened at intervals of about 15 cm by hori-

zontal ribbing roughly notched to represent a rope. The vat had a rounded base and measured 112 cm in diameter and 75.50 cm in depth. Its average thickness was 2 centimetres. As the rim was 12 cm above the level of the footing, it must have been on a level with the mud pavement which was missing in this portion of the chamber. There was apparently some danger of people falling into this vat in passing through this room, and this was obviated by building a thin wall, whose base rests partly on the footing, to act as a guard.

Room 51 measured 6.60 by 3.80 m and was paved with burnt bricks of two sizes, averaging 24 x 16 x 3.50-4 cm and 20 x 13.50 x 3-6 centimetres. The former is the size of the bricks used in the building of the original palace, and it is clear that the builders of the annex did not hesitate to use material taken from buildings of an earlier date. The floor of this room slopes noticeably toward the north, the drop being as much as 20 cm in the width of the chamber. The doorway in the north of this chamber seems to have been a later addition. For some reason or other chamber 46 does not communicate with chamber 47, as one would expect. I should imagine that originally there was a doorway between the two and that it was subsequently blocked up, an entrance to chamber 46 being made from 51 instead. This new doorway must have been cut from chamber 51, for the mistake was made of cutting partly into the wall between rooms 46 and 47—an error probably due to miscalculation. Owing to the bad state of the brickwork it was impossible to detect any signs of the blocking up of the old door, and the presence of a burial of later date in the wall between chambers 46 and 47 further confused matters. The dimensions of chamber 46 are 9.10 m by 3.70 m and it shows no features of interest with the exception of its doorway.

The adjoining chamber (47) is of the same size. It is entered from 48, which is a little wider (4 m), though of the same length. This latter chamber is entered from 49, which is 9.30 by 6.90 metres. This fine room and Nos. 46-48 would appear to have been used as store-rooms, for the floors of the whole series are of unbaked brick. It is an open question whether these four were ever supplied with doors. If so, the doors must have been of the simplest nature. A peculiar feature of rooms 47-49 was that numbers of bones of oxen were found in them at a level above the footing. Quantities of ash were found with these bones, though none showed any signs of having been burnt. The fact that these bones, from all parts of the body, were mingled pell-mell in the chambers would preclude their being ordinary interments. Whether they belong to the same period as the building is difficult to say; but burial 55 was found lying above them, which proves that the deposits of bones are of earlier date than the graves, which are dated to about 3000 B.C.

Proceeding to the east from chamber 49, a narrow passage (41) is reached, which is 2.60 m in width. Into this passage chamber 54, which measures 6.50 by 4.40 m in the middle, opens from the south. This chamber is slightly out of the square, as is also room 53, though not to such an extent. This is due to their northern and southern walls not being parallel. In chamber 54 a pottery jar was found, 54 cm in diameter, with a thick rim and no neck. This jar was in an

upright position with its rim 16 cm below the base of the footing, itself 190 cm below the datum level. Nothing whatever was found in the jar, and its position can be explained only by its being at one time used to supply water to the builders of the annex and then left in its original position. Unfortunately, owing to a mistake on the part of the pickman who cleared this room, this jar, which fell to pieces when extracted, was not brought to the camp to be drawn.

Chamber 50 is a trifle askew and measures 5.90 by 4.90 metres. Its walls are exceptionally well preserved, especially on the northern side, the outline of each brick showing clearly after the plaster covering had been removed. The bricks are of the usual size, 20.50 x 13.50 x 4-6.50 centimetres. At a level with the footing, a quantity of white plaster was found, which may once have formed a pavement, or have fallen with the roof when the latter fell in; in any case, it was too thick to have come from the walls.

Chamber 40 measures 5.60 by 5.20 metres. The thinness of the wall that separates it from room 50 is unusual. It may be that the two rooms were originally one, which was subsequently divided to make two smaller ones. If this be so, the building of the annex had not advanced sufficiently to prevent this wall having the usual footing.

The long portico numbered 42 on the plan is, as far as is known at present, unique in Sumerian architecture. Its inner portion measures 19.60 by 3.10 metres. It was open to the air on the eastern side, where there were four massive columns, constructed entirely of unbaked mud brick, for the support of the roof. Such a piece of architecture proves beyond doubt that the Sumerian realized the value of the column as a decorative feature as well as for its utility. The columns were in a remarkable state of preservation, although denuded down to but a small fraction of their original height. Their average height is now 70 cm above the level of the footing upon which they stand. Each column was constructed of sun-dried bricks, rhomboid in shape, measuring 17 by 24 centimetres. The smaller end of each brick is 14 cm wide, and its thickness 3.50 centimetres. As in the case of the pillars of the hall (45), the wider end of each brick is slightly curved to adapt it to the curvature of the column. Each column is 1 m in diameter, and the bricks of each layer were arranged in an outer ring of eleven, inside of which was another ring of five, and the space in the middle was filled in with a single brick. This arrangement can be seen clearly in Plate XXXII, Fig. 3. The cement used was the same mud as was used to make the bricks, and this, combined with the heavy weight of the column, has compressed bricks and mortar into a practically homogeneous mass, from which separate bricks are extracted with difficulty. The face of each column was coated with thin mud plaster, and it was noticed that, when this had undergone a certain amount of weathering after the excavation of the columns, the outlines of the bricks were clearly distinguishable. It would seem that the plaster with which the columns were faced was carefully rubbed into the interstices between the bricks and not their faces, thus giving the columns the appearance of being of brickwork—an appearance which can be given to sun-dried bricks as well as to baked bricks, though in a lesser degree.

Columns in such an exposed position as these were must have been covered with a waterproof material, such as burnt brick or bitumen. Though there were no indications of either the one or the other in the immediate neighborhood of the columns, a few burnt bricks were found a little south of the stairway, of the same shape and dimensions as the crude mud bricks of the columns. As there was no apparent reason for their position, we may perhaps assume that they were merely dropped there. One of these bricks is shown in Plate XXXII, at the base of Fig. 1 on the right-hand side. It would seem, therefore, very probable that these columns were at one time covered with burnt brick. If so, their diameter, instead of being 1 m, must have been at least 1.35 metres. It is indeed possible that two thicknesses of burnt bricks were used. If so, allowing a little for the thickness of the mortar, the face of each column would be brought within about 17 cm of the edge of the walling on which they stand.

The "wall" upon which the columns stand is 1.90 m wide and 95 cm high. As shown above, it is difficult to state with certainty whether it can strictly be described as a wall and not as part of the foundations, once concealed beneath the ground. It is, however, represented as a wall which is for convenience's sake painted black in the plan. On reference to the section along line E-F in Plate XXIII it will be seen that this structure slopes toward the south, the declination being as much as 85 cm in a total length of 33.50 metres. This proves that this part of the palace was constructed on sloping ground; and for this reason alone I think that the apparent wall once lay entirely beneath the ground with no part above it.

The principal entrance to the portion of the annex that remains was from the portico through chamber 61. The relations of this part of the building to whatever rooms lay to the south will never be known, for this portion of the palace has completely disappeared. One would certainly have expected the passage 41 to have led to the interior of the building instead of to the comparatively unimportant series of chambers 47-50. There may have been another doorway somewhere, though it could not be found, a possibility being that it was anciently blocked up and masked. I would suggest that if other doorways once existed they opened from chamber 7 to 46 and thence into the pillared hall. It will never be known how the portico (42) was roofed, or even to what height the columns reached. In all probability, however, the roof was flat and constructed of mud and matting laid on wooden beams, as at the present day in Iraq; for there is as yet no evidence that the Sumerians used the dome to roof any of their buildings. It is hard to see how the building was protected from attack from this quarter, for it would seem to be most vulnerable. The most likely solution of the question appears to be that there was once a considerable space or courtyard in front of the stairway entrance to the palace, enclosed on the west by the columned portico and on the eastern and southern sides by buildings which have entirely disappeared through denudation.

It was naturally expected at first that a companion colonnade to the one at the west would be found to the east of the open courtyard, but no trace of it could

be discovered. Indeed, it is hard to think that one ever existed, for its foundations could hardly have disappeared entirely. Nor, if it had been placed symmetrically with the stairway, would the additional buttresses on the east of the stairway ever have been built. It is possible, of course, that a companion colonnade was designed but never built, owing to the fall of the palace.

Reference again to the section on line E-F in Plate XXIII will show that the higher level of the annex, as compared with the eastern wing of the palace, precluded the use of the older stairway or rather the lower portion of it. Over it a ramp was built by erecting flanking walls on either side of the stairway and filling in the space between these walls with large lumps of river-clay. The length of this ramp cannot be determined as its southern end is missing, but it need not have been of any very great length, for the distance to be traversed and the ascent were not great. It is to the existence of this ramp that we are indebted for the splendid preservation of the stairway, which was found in much better condition than the adjacent structures. The walls of the ramp were 150 cm thick and made of bricks of various sizes, these being 23.50 x 14 x 5-6 cm, 23 x 15 x 4-5 cm, 22.50 x 14.50 x 4-5 cm and 22 x 14 x 4-5 centimetres. All these bricks are of baked clay and laid in mud mortar. They were irregularly arranged in alternate headers and stretchers, there being sometimes two courses of stretchers followed by a course of headers. These walls were covered on the outside with a thick layer of mud which was thinly stuccoed. They were built upon foundations of river-clay, whose surface is indicated by a broken line in section E-F in Plate XXIII. In a distance of 7.45 m measured along this line, the rise was 1.07 m, which provided an easy ascent and descent. The photograph of one of these walls (Plate XXIV, Fig. 3) before it was removed shows the burnt brickwork clearly and also the clay foundations beneath it. In the plan (Plate XXI) the walls of the ramp have purposely been shown as incomplete to avoid confusing them with the plan of the building.

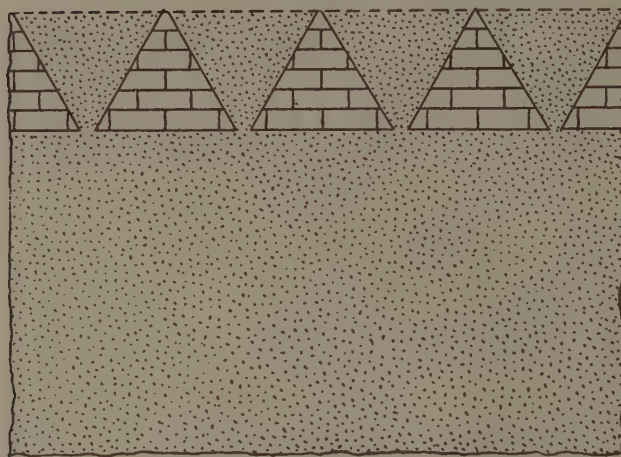
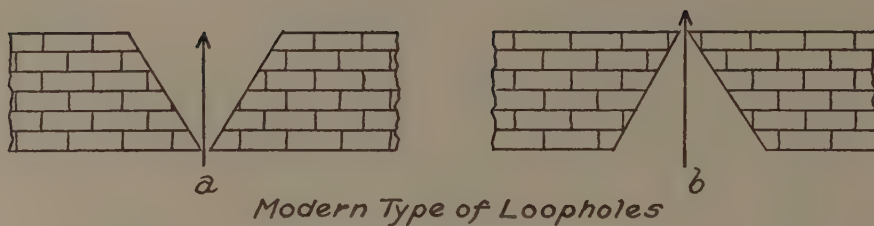
SOME MILITARY ASPECTS OF THE PALACE "A"

BY LIEUTENANT COLONEL W. H. LANE

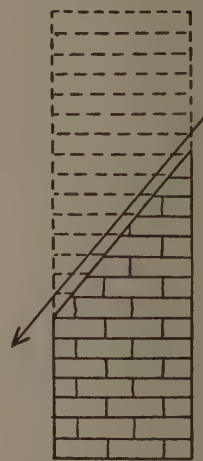
The excavations at Kish have definitely proved the fact that, at the period of the "loaf-shaped" plano-convex brick, the construction of buildings had reached a high degree of architectural skill. We may therefore conjecture, with an appreciable degree of certainty, that the skill of the military engineer had reached a standard of proficiency at least equal to that of the civil architect. In studying the military aspect of a building of this period, therefore, we should expect to find the main principles of defence skilfully applied in relation to the weapons of offence and defence extant at the time of construction.

The palace at "A," so far as it has escaped denudation, comprises two buildings—the main building and an annex.

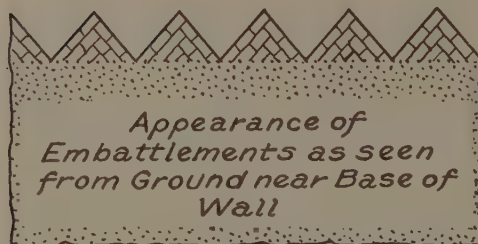
The construction of the annex is on a much less solid basis than that of the main building. It would seem probable, therefore, that the annex contained the state apartments, such as the throne room, the audience chambers, anterooms, etc., whereas the main building contained the private residential rooms of the



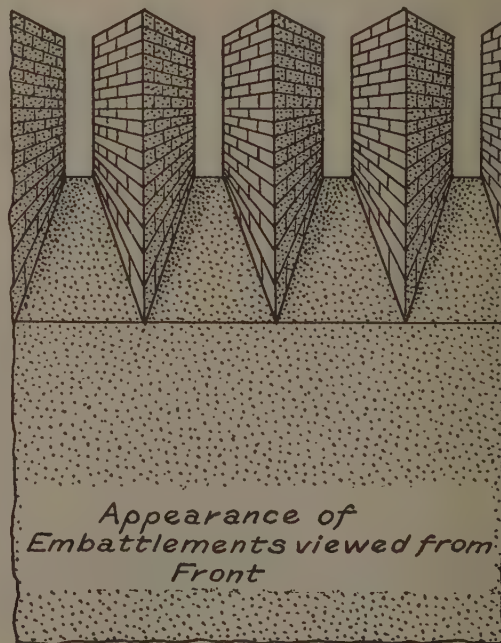
c
Plan of Loopholes and Wall



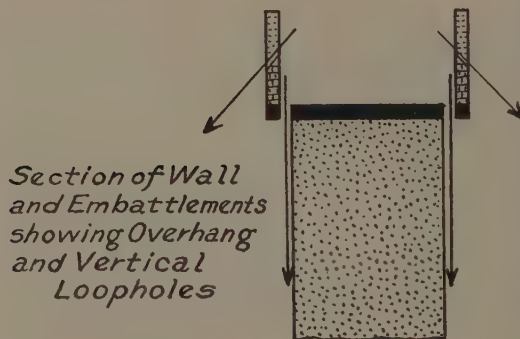
d
Section of Loophole



e



g



f

DEFENSIVE ARRANGEMENTS OF PALACE "A"

royal family and their court. The main building would therefore comprise the "keep." There may have been some subsidiary defences on the exterior wall of the annex, but these would not have been of the same strength as we should expect to find in the main building. Turning our attention, therefore, to the main building, of which the western wing is the only portion sufficiently well preserved to afford us any clue to the system of its defences, we see that the wing was surrounded by an outer wall 3.50 m in thickness. This outer wall must have comprised the main line of defence with a second line of defence consisting of the actual wall of the wing.

Now one of the fundamental principles of the defence of a building is that the defences of that building should be so constructed as to enable the largest volume of fire to be delivered commensurate with the size of the building. To ensure the largest volume of arrow fire being delivered from the wing, it would be necessary to arrange the defences so that two tiers of fire could be delivered simultaneously, one from the embattlements of the main line of defence, the outer wall, the other from the embattlements of the second line of defence, the exterior wall of the wing. The only possible means of obtaining two such tiers of fire, therefore, would be to make the exterior wall of the wing considerably higher than the outer wall, and in any "conjectural restoration" of the palace at "A" this point would have to be borne in mind. Another fundamental principle of defence is that all ground over which the attackers can approach should be commanded by the fire of the defenders. Therefore we may suppose that the actual embattlements were so designed that fire could be brought to bear on any part of the ground in the immediate vicinity of the wing from both the lines of defence.

How, then, were these battlements designed? First, the tops of each of the two walls would be utilized for the passage and concentration of the forces of the defenders. Therefore only the outer portion of each wall would be embattled. The next question to be considered is whether the principle of the loophole had been evolved or not. Surely previous experience of attacks on buildings would have taught the Sumerians the advantage of furnishing cover for the defenders? Previous experience would also have given them the lesson that loopholes must be splayed out to enable the defender to shoot to a flank. For, if the archer could only shoot direct to his front, then the terrain at the corners of the building could not be commanded by the fire from the embattlements. Now in modern defence of buildings loopholes can be constructed in two ways (see diagrams *a* and *b*). The principle of construction is probably as old as military science. Which method, *a* or *b*, was adopted by the Sumerians? A series of loopholes constructed as in *a* would (in plan) appear as in *c*. But in order to deliver fire at an angle downward the base of the loophole, instead of being horizontal, would be cut away as in *d* and *e*. Looking up to the embattlements loopholed as in *d* from near the base of the wall, the appearance of the embattlements would be as in *f*. This diagram is almost identical with the form of embattlements shown in the gold plaque figured in King's "History of Babylon" (p. 67).

In order to obtain fire vertically so as to shoot at an enemy who had gained the base of the wall, the superstructure, certainly at the turrets, would have to

project beyond the top of the wall, and vertical loopholes would have to be constructed as in *g*. To accomplish this, beams would have to be laid transversely across the top of the wall, a pavement of burnt bricks laid over the beams, and the pavement covered with bitumen. The sides of the loopholes and the sloping base would also be covered with bitumen to prevent weathering and to allow rain-water to drain off. In the projecting portions funnel-shaped loopholes would be constructed, and the artist who made the gold plaque referred to has apparently attempted to portray these vertical loopholes. The space between the outer wall of the wing also had its defensive advantages. In the event of the outer wall being breached, the besiegers would find themselves in a very narrow passage, where they could advance only three abreast at most; they would thus form an easy target for those defending the "blocks" at the ends of the passages; they would also be liable to have missiles dropped on their heads by the defenders on the embattlements above. In fact their position could be rendered untenable by a small section of the defending force.

The most vulnerable portion of the main building would be the main entrance. This has been recessed and stepped, thereby displaying a thorough knowledge of military exigencies; for any attack on the main entrance would be met by a frontal fire, and also by fire from both flanks, and furthermore by fire from the left rear, directed from the embattlements of the annex. So much for the details of the defences of the palace itself. In regard to the part played by the palace at "A" in the general defensive scheme of the city it is impossible to form any opinion until the city ruins have been further excavated (T and X on Map).

THE DATING OF THE PALACE

Up to the present nothing has been found in the palace or its vicinity that enables us to date decisively either the building or the graves which were dug later upon this site. We have to rely, therefore, on a certain amount of deduction to fix certain periods within which the different portions of the palace were built and the burials made. The palace is composed of two separate buildings the northern portion of which is earlier than the southern portion. This is proved by the levels of the stairway and colonnades as well as by the brickwork of the temporary obstructions that shut off part of the corridor (1) on the north of the building and block the southern end of passage 22—points discussed in the previous chapter. There is even more satisfactory proof that the larger building is the earlier, supplied by the thin facing of brickwork (described in the last chapter), which was built along its southern façade when that ceased to be an outer wall. What interval of time elapsed between the building of the original palace and the erection of the annex beside it, is not known. It was probably not so very great, and the two buildings were most likely the work of the same dynasty. The close of a dynasty in ancient Babylonia was generally marked by great upheavals, the reason generally being that a stronger man took the place of a weaker one. During such upheavals, fortified buildings, such as palaces, must have suffered considerably, and this probably led to entirely new buildings being erected rather

than the old ones being repaired. The annex therefore would hardly have been placed alongside a building of a previous dynasty.

In the preceding chapter it has been mentioned that the fragments of a fine inlaid plaque (illustrated in Plate XXXV, Figs. 2 and 3) were found to the north of chamber 35 and that close by were found pieces of mother-of-pearl inlay, which may have come from the same scene. Among the latter was the upper part of a male figure wearing an elaborate girdle, with the signs "Lugal ud Lugal," incised upon it (Plate XXXV, Fig. 1, upper left-hand corner).

There is no doubt, I think, that this inlay once formed part of the decoration of a room in the palace, which was so badly denuded that its walls have disappeared. The fact that the name Lugal ("king") occurs twice suggests that in one case it is also a proper name. From the Weld-Blundell prism it is certain that Lugal-mu was the last king of the second dynasty of Kish and that Kish was then "smitten by weapons."¹³ S. Langdon and Fotheringham, by calculations into which it is needless to enter here, estimate the date of Lugal-mu as being 3500 B.C.—a date which agrees with the style of the palace and the bricks that were used to build it.

The expression in the Weld-Blundell prism that Kish was "smitten by weapons" can only mean that it was conquered by force, and the Hamasi, who were a wild people from the north, are mentioned as the enemy. It was probably then the Hamasi who destroyed the palace, breaking into it from the west through the breaches that were found in the fortified walls of the original palace and also of the annex. After this invasion the palace was left derelict for a very considerable time, as proved by the amount of mud that was washed from its walls into the chambers so that they were completely filled.

The next period of prosperity for Kish, according to the prism, was dynasty III which was founded by Kug-Bau, a female wine-seller at Kish. The date of Kug-Bau, according to Langdon and Fotheringham, is 2947 B.C. Kug-Bau is said in the prism to be contemporary with Eannatum II of Lagash, and it is to the period of the latter king that I attribute the one hundred and forty burials that were found upon the walls and in the chambers of the palace. Indeed it is possible that some of these graves may be even earlier than Eannatum, for some of the ceramic forms in them are practically identical with pottery found by Woolley at Ur, and dated by him to the period of Mesannipadda. The reasons for dating the graves to the period of Eannatum II will be fully discussed in a subsequent chapter.

There is no reason for thinking the interval of time between the collapse of the second dynasty of Kish and the starting of the third dynasty (a period of about five hundred years) too long to account for satisfactorily. The positions of some of the graves in relations to the wall of the ruined palace throw considerable light on this question. Some of the graves were found right on the surfaces of walls which were standing only a little over a metre high, walls which originally must have stood at least three times this height. There is no doubt that the burials were placed on the walls and not cut down into them; for the debris for some considerable distance around consisted of rubbish in which decayed walling

had no part. The position of such burials, therefore, proves beyond a doubt that mound "A" was left derelict for a very considerable time. At least five hundred years would be required for the weathering-down of the walls to one metre in height. Much stress is laid on this last point, for denudation in Mesopotamia, despite the winter rains and summer heat, is a much slower process than might be supposed.

To the north of palace "A" we have partially excavated a building whose site is marked "P" on the map. The pottery recovered from this building seems of even earlier date than that found in the palace. This therefore may be a building of the early part of the second dynasty of Kish, whereas the "A" palace appears to belong to the latter end of the dynasty.

BRICKS AND BRICKWORK OF THE PALACE

This chapter deals with the various types and sizes of bricks found in the palace "A" at Kish, the method of laying them, and other technical matters connected therewith. To simplify matters, the types of bricks will be dealt with first in the chronological order assigned to them by their positions in the palace.

SUN-DRIED BRICKS

All the bricks found in the Sumerian palace at "A" are of the well-known plano-convex type, being rectangular in shape with a flat base and curved upper surface, which is very pronounced so that the middle is considerably higher than the edges of the bricks. Where the sizes of these have been mentioned in this book, the expression "3.50 to 5 cm thick" means that the brick is 3.50 cm thick at its ends and 5 cm thick in the highest part.

All the sun-dried bricks found in the palace were made of the alluvial earth that covers the greater part of Mesopotamia. It is light gray in color, and is not so fat and unctuous in texture as the alluvial soil found in Egypt. For this reason, the bricks used at Kish were not of so good a quality as those used by the ancient Egyptians. The difference is due entirely to the material, not to the skill of the brickmaker. For some reason, river-clay was not used for brick-making at Kish, though it was utilized in large quantities for the filling of foundations. Such clay is excellent for brick-making, but it requires an admixture of sand to prevent cracking and distortion during the process of drying. Sand is very hard to obtain in an alluvial country, as I have found to my cost. It is probably owing to this difficulty that the softer alluvial earth was used instead. Another difference between Egyptian and Sumerian brickwork is that the Sumerian used no *tibn* ("chopped straw") with the earth to strengthen it, as was the common practice in Egypt from the earliest times. The fact that the Sumerians at Kish knew of the value of chopped straw or reeds for binding purposes is proved by their actually using it on occasion in the building of the palace; but it was mixed with the mud mortar around the bricks, not in the bricks themselves. This occurs in the temporary blocking up of the corridor between the outer and inner wards on the north of the palace—a piece of work which was obviously hastily done.

The bricks are all made in an open frame mould, such as is in use at the present day both in Mesopotamia and in Egypt. The depth of the mould averages 3.50 cm, and that it was made of wood is shown by the markings left in many cases on the sides of the bricks. The mould seems to have been laid on the ground, and the clay then placed in it. The surplus material was then patted into a rounded mass instead of being struck off with the edge of the palm of the hand. The ground upon which the bricks were moulded does not seem to have been especially selected, for pieces of pottery and other rubbish were in many cases left sticking in the base of the brick, or have left their imprint.

Mud mortar alone was used for the purpose of cementing sun-dried bricks together, and it was nearly always of a better quality than the mud composing the bricks themselves. The bricks are invariably laid with their convex surface upward, except in those cases where they were laid on their edges. The mortar seems to have been applied with the hands, not with any special kind of tool, for it is always very compact with no crevices or fissures.¹⁴

The use of mortar of the same substance as that of which the bricks were made caused the wall to become practically one solid mass of mud with the pressure from above. It has accordingly proved difficult to extract bricks from the wall for measurement. A section through such a wall clearly shows light gray courses of bricks set in a matrix of mortar of either the same color or, if a more tenacious clay was used, a light chocolate.

In the majority of instances bricks were laid flat with courses arranged in alternate headers and stretchers. In parts of the same wall, however, it is possible to find considerable sections where all headers were used or all stretchers. Indeed, there does not appear to have been any fixed rule, either for the arrangement of the bricks in the faces of a wall or the filling inside. A fairly common method of laying bricks seen elsewhere in Kish, but not actually in the palace, was to set them upon their longer edges, either bolt upright or at an angle; and, laid thus, they give the appearance of a chevron design. But the practice of laying the bricks obliquely all in one direction was not uncommon in the palace, and an example is illustrated in Plate XXXII, Fig. 2. It should be clearly understood that the builders of the palace never laid bricks on their edges for the sake of ornamentation. Every wall of the palace was heavily plastered with mud, and then plastered again with a white stucco.

The stucco used for whitening walls was exactly the same as the *juss* that is used at the present day in Mesopotamia, which is made by burning gypsum. The latter is found in great quantities at Iskanderieh, south of Baghdad, and also close to Samarra, where it can be picked up on the surface of the ground, and is also quarried. A number of pieces of the rock, some over a metre long, from which the stucco was made, were found just beneath the surface of the ground outside the outer wall of the palace in a position which suggested that they had fallen from the building itself. There is evidence from other parts of Kish that this schistose rock, besides being burnt for plaster, was used for the lintels of narrow doorways and as door-sills.

The sun-dried bricks used in the palace were of two sizes, of which the earlier ones, measuring 23 x 15 x 3-5.50 cm, were used to build the original north-west portion of the palace. Those of the second size, averaging 20.50 x 13.50 x 4-6.50 cm, were used in the annex to the south and also those parts of the northern portion of the palace where repairs or alterations were made during or after the building of the annex. There is practically no difference in the quality of the two sizes of brick. They varied but little from the standard lengths and breadths, but there was considerable variation in thickness, the smaller-sized brick generally being much thicker than the larger one.

In the time of Hammurabi and in later periods, a layer of reed matting or loose reeds was often placed at certain levels in a mud-brick wall. This was not observed in the palace. Though traces of matting were frequently found on the floors of the rooms, it was proved in every case that these came from the roof which had collapsed into the chamber, not from the walls.

None of the bricks found in the palace can be regarded as primitive. They were well made and shaped and altogether they were a creditable production, considering the fact that they were made by hand in a mould and in enormous quantities. The fact that the Sumerian also devised bricks for certain purposes is proved by the use of rhomboidal bricks to build the columns of the colonnade and of the large pillared hall. Bricks of this latter shape were made in special moulds.

BAKED BRICKS

None of the baked bricks found in the palace was used for building walls. Their use was entirely confined to paving rooms and passages, and possibly encasing the mud-brick columns. Baked bricks are considerably flatter than sun-dried bricks, for in the latter the extra thickness is needed to make them strong enough to be handled without breaking. For this reason not a single baked brick has been found with the upper surface as convex as in the unbaked kind, except where sun-dried bricks have been accidentally burned in the firing of a building. The latter can be readily identified by the pooriness of their baking as compared with the bricks which have been properly baked in a kiln.

The sizes of the burnt bricks in various parts of the palace are as follows:—

Chambers	Centimetres
6	27 x 17 x 5-6
14	25 x 17 x 5-6
15	23 x 13 x 4-6, 23.50 x 16 x 4-5
16	25 x 14 x 3-5, 23.50 x 13 x 4-6, 23.15 x 6 x 4-5
18	24 x 14 x 4-5
19	21 x 17 x 5-6
23	23 x 15 x 5-6, 24 x 17.50 x 4-5.50
30	24 x 14 x 4-5
33	24.50 x 17.50 x 4-4.50
45	18.50 x 13 x 3-4.50, 20 x 13.50 x 3-4, 23 x 15 x 3.50-4.50 24 x 14.50 x 3-5, 24.50 x 16.50 x 4.50-6.50
51	20 x 13.50 x 3-6, 24 x 16 x 4-5.50
60	24 x 15 x 3-4

It appears from the above table that there is a considerable diversity in the sizes of the baked bricks. Even in the chamber, bricks of more than one

size were used, and in the great pillared hall as many as five different sizes of bricks occurred in the paving. The fact that comparatively few of the chambers bore actual traces of having been paved with brick may perhaps be put down to the activities of brick-robbers. Indeed, where fragments of the pavement still remain, the missing bricks must have been taken from them for other purposes in early times.

Comparatively few of the bricks were marked with the thumb or by any other means. This is curious, because in another large building that was excavated ("P") the great majority of the bricks were thumb-marked. In the palace, thumb-marked bricks were found only in chambers 18 and 30 and in the pillared hall, the sizes of the bricks so marked being 24 x 14 x 4-5 cm and 24 x 15 x 4-5 centimetres. The thumb-marks were all in the middle of the brick and in the direction of its longer axis. Several paving bricks of the pillared hall, which measure 24.50 x 16.50 x 4.50-6.50 cm, had a shallow mark longitudinally down the middle, made with a stick or with the finger. Similar bricks, which have been picked up on the slopes of Ingharra, may have been removed from this hall in early times.¹⁵

The object of thus marking bricks—a common practice in early times—has been much discussed. The general opinion is that these marks were for frogging purposes so that the mortar, whether bitumen or mud, might adhere the more readily to the brick. The difficulty in this theory, which to my mind is insuperable, is that the thumb-mark is not always in the centre of the brick; it is sometimes in the corner where it would not be of very much use. Also the markings are in many cases so shallow that they would be useless for frogging. I am inclined to think that these thumb-marks are in reality brickmakers' marks intended to distinguish the products of one brickmaker from another. A similar system of marking is very common in the Near East at the present day to prevent any person from claiming bricks that do not belong to him, when they are delivered at the building where they are to be used. Some of the plano-convex bricks at Kish—but not from the palace—bear two thumb-marks for identification, and there is no doubt that other markings of this nature will be found when more of Kish has been excavated. At Bismya, Banks found plano-convex bricks marked in many different ways, usually with a stick, as in the case of the bricks above mentioned, which were found in the pillared hall. He attributed these markings to the several restorers of the building in which the bricks were found, suggesting that each ruler who restored a building used an especially marked brick to demarcate his work from that of his predecessors. The markings which Banks found were also, in the majority of cases, too shallow to be of use for frogging. This evidence, together with that supplied by Kish, proves, I think, that the marks found on plano-convex bricks are the private marks by which the brick-maker identified his wares.

The baked bricks found in chambers 6, 14, and 19 seem to have been especially made for paving, as they are extremely flat and their size (27 x 17 x 5-6 cm) is most unusual. They are exceedingly hard baked, well made, and laid very carefully.

MORTAR

Mud mortar seems to have been almost universally used at Kish, though bitumen was commonly so used in the southern cities of Sumer. When used at Kish, bitumen chiefly served to cover the surface of a pavement of burnt brick, or it was sometimes plastered some distance up the mud-brick walls to form a water-proof wainscot.

FOUNDATIONS

Throughout the palace, both in the older and the later portions, the foundation or footing, as I prefer to call it, of a wall is considerably thicker than that part of the wall which appeared above the level of the ground. It forms a kind of shelf around the walls of a room, on the level of which the pavement is laid. This shelf is not always of the same width all around the room, nor is it always of a uniform height. The width varies from 17 cm to as much as 37 cm in the same chamber. These foundations are filled up in their entirety with lumps of stiff river-clay—a method of filling foundations commonly adopted at Kish at that early period. It has been observed, not only at the palace, but also in another building at Ingharra and in a huge fortress-palace ("P") about a mile to the N. W. of the "A" mound. Judging from the conoidal cleavage of these lumps of clay, they were dug out of the river bed in large masses, and then allowed to dry before being thrown into the foundations. No particular care was taken in packing the clay, and a section cut through a filling reveals holes and interstices between the various lumps which range in size from pieces as big as an egg to others about twice the size of a football. These pieces of clay were all irregular in size, not fashioned in any way by the hand. After the foundations of a chamber had been filled in as far as the top of the footing, it was levelled with ordinary alluvial earth, and then bricks, baked or sun-dried, and sometimes both, were laid to make the floor.

The exact object of filling foundations with clay instead of earth is a matter for speculation. That it did not always prevent the subsidence of the paving is proved by its irregularity in many of the rooms. If the palace had been a temple, we might suggest that the filling was provided for its purity, on the basis that as the river from which it is taken was sacred, the clay which formed its bed was also sacred and therefore most suitable for use in a temple. As a secular building is in question, however, the sacred or secular nature of its foundations ought not to matter. The fact remains that in dedicatory inscriptions of a later date, the frequent expression, "I laid this foundation with clean earth," suggests the survival of the custom of filling foundations with clean river-clay.

In practically every chamber, we cleared right down to the bottom of its foundations with the hopes of finding objects that had been buried beneath the pavement. Disappointment followed invariably, except for occasionally finding graves of a later period. In the course of these investigations, however, one interesting feature came to light—the foundations were themselves laid upon pavements of mud brick. These pavements were so common that we are forced to conclude that when the ground beneath the palace was levelled for building, a

pavement was first laid down over the whole area before the foundations were commenced. It is possible that the plan of the building was actually outlined first upon this pavement for the guidance of the builders.

The ground beneath the foundations of the palace was far from clean. It shows evidence of earlier occupation in the shape of ashes mixed with pottery fragments. The latter, unfortunately, show no definite forms. Very few traces of buildings were found with the exception of a small piece of walling beneath the southern end of the footing of the colonnade, which is shown in dotted lines in the palace (Plate XXI), and another piece underneath the north-west corner of the palace. Its height was 50 cm, and its base 49 cm below datum. The wall beneath the north-west corner of the palace has not yet been properly examined and cannot, therefore, be shown on the plan. It lies roughly N.-S., and is built of bricks measuring 21 x 11 x 4.50-7.50 centimetres. Its top was 15 cm above datum. In its neighborhood, the ground beneath the foundations of the palace was a mass of potsherds and burnt material. Most of the sherds were fragments of open dishes with flat bases showing focussed grooves. Two sling-stones of unbaked clay were found in this rubbish of exactly the same form as those found in other parts of Kish and dated to a later period than that of our palace (Reg. No. 2863; Field. Plate XLIV, Fig. 3).

Most of the chambers of the palace, especially those adjacent to the outer walls, show signs of having been burned. The walls are in many places red in color, and deep layers of ashes covered the floors. The firing of the building was undoubtedly the act of an enemy, who after taking the whole or part of the palace set fire to the roof, which finally collapsed inside the chambers, and probably smouldered for a considerable time. This slow burning would account for the partial baking of the sun-dried bricks in some of the walls, which has given rise to the mistaken impression that the upper surface of baked plano-convex bricks was of the same degree of convexity as in sun-dried bricks.

ERRORS

The palace was exceedingly well set out, and errors were comparatively few. In a mud building of this kind it was not possible to effect the refinement that one expects in a building of stone. Errors up to 10 cm, such as were found in some of the chambers, are quite excusable. In surveying the chambers, a wall with a badly decayed face was tied in from as many as five points, and an average of these was taken as giving the true line. Where long lengths of walling were concerned, they were tied in from as many as ten points to ascertain their alignment with accuracy. The greater part of the northern portion of the palace (Plate XXI) was built with the greatest accuracy; but the walls that enclose chambers 10, 11, 16, and 21 are considerably askew, which error is corrected, but not completely, by the walls on either side of the passage 22. As we travel east, the error becomes less and less until the walls of the chambers at the east of the stairway resume their original alignment.

Measurements taken along the outside walls of the northern portion of the palace show considerable accuracy in the main walls of the building. For instance,

there is only a difference of 20 cm between the length of the western side of the building (41 m) and that of the eastern side (41 m), taken through passage 22. Measurements along the northern and southern sides of the building reveal no errors whatever, the distance being 74.60 m as taken from the face of the great wall on the west to the outer face of the great wall on the east of chambers 29, 30, and 31. The variations in the annex are more pronounced. The distance at the west between the outer footing of the northern wall and the southern side of chamber 44 is 28.70 metres. The corresponding distance at the eastern end of the building is 29.30 m—a difference of 60 centimetres. This error is, however, practically negligible in a building of this size. The length of the annex at the north is 57.60 m and at the south 56.25 m—a rather larger error of 1.35 metres.

The levelling of the northern portion of the palace was also surprisingly good, as will be seen by the figures in the chapter devoted to the description of the building. This again was not the case with the annex, which varies greatly in different parts. Any serious differences in the heights of the foundations could, however, be readily corrected by the filling that concealed them and be unnoticeable inside the rooms. In all probability, the level of the ground outside the palace was considerably below the footing, which in that case must have appeared as a ledge all around the building; but the only definite evidence of this at present is that the level of the bottom step of the stairway is 1.45 cm below datum and, therefore, as shown by the levels, considerably below the top of the footing in all parts of the annex. The building at "A," therefore, stood, as it were, on a platform which was not apparent until one entered it.

MEASUREMENTS OF CHAMBERS

It was hoped by collecting the dimensions of both walls and foundations of the chambers of the palace to ascertain what particular scale was used in setting it out. Most of the dimensions could be measured with a fair degree of accuracy, but slight errors due to the thickness of the plaster had to be taken into account in the case of the walls. These errors were eliminated as far as possible by taking the average of several measurements made. One would expect, however, that the foundation dimensions would be the ones which were actually set out by the architect. The walls were in all cases narrower than the foundations on which they stood, and possibly less care was exercised in fixing their width.

It will be seen that the digit numbers do not form even fractions of the cubit, as one would expect. Prolonged study of the actual measurements has failed, however, to reveal any more satisfactory unit of measure than the digit. We have to take into account both the wear and tear of time and the fact that the mason of ancient times probably followed the plan outlined for him no more accurately than does the Oriental of to-day. There is also the possibility that, once the main outlines of the buildings were set out, the sizes of the various rooms were fixed more or less arbitrarily.

The following figures represent the dimensions most frequently met with in both the original palace and the annex. The digit has been taken as equal to that marked on the lap of the Gudea statue, namely, 16.50 mm; the royal cubit as 30 and the small cubit as 20 digits.

FROM WALL TO WALL				FROM FOUNDATIONS TO FOUNDATIONS					
METRES	ROYAL CUBITS AND DIGITS		SMALL CUBITS AND DIGITS		METRES	ROYAL CUBITS AND DIGITS		SMALL CUBITS AND DIGITS	
	Cubits	Digits	Cubits	Digits		Cubits	Digits	Cubits	Digits
1.60	3	7	4	17	2.60	5	8	7	18
1.90	3	25	5	15	3.05	6	7	9	7
2.15	4	10	6	10	3.73	7	16	11	6
2.50	5	2	7	12	4.00	8	2	12	2
2.60	5	8	7	18	4.40	8	27	13	7
3.10	6	8	9	8	5.20	10	15	15	15
3.15	6	11	9	11	5.90	11	28	17	18
3.50	7	2	10	12	6.60	13	10	20	—
5.15	10	12	15	12	7.90	15	29	23	19
7.35	14	25	22	5	9.50	17	5	25	15
9.90	20		30	—	10.60	21	12	32	2
10.00	20	6	30	6	10.95	22	4	33	4
10.15	20	15	30	15	11.85	23	28	35	18
11.50	23	7	34	17	14.50	29	9	43	19
26.50	53	16	80	6	26.70	53	28	80	18

LATER WALLING AND DRAINS

To avoid confusion, a skeleton plan of the palace is given in Plate XXII, showing the position of the later walls. This plan, as will be seen, has also been used to mark the positions of the many graves found in the course of excavation; and it should be noted that the position of every grave was tied in with the theodolite. In describing the later walls built above the palace, those above the northern portion will be mentioned first.

Wall "O" measures 12.20 by 1.10 m, and in places stands 1.70 m high. Its eastern end is complete, as shown, but a portion—it is not known how much—is missing from the western end. On the southern side there were two recesses, averaging 60 cm in width by 40 cm in depth, which seem to have been intended for ornament as they run up to the summit of the wall. The bricks of which this wall is made measure 20 x 15 x 3.50-6 cm, and are of exactly the same size as those of the building whose ruins lie beneath. This is perhaps to be expected, as for a small building of this kind bricks would be borrowed from an earlier site. The level of the base of this wall averages 44 cm above datum, and it rests crosswise immediately upon the earlier wall beneath it. The two thin walls "P" are parallel with one another and appear to be all that is left of a room. They average 3 m in length by 50 cm in thickness. These are also made from bricks taken from the walls below. They are well constructed and well plastered with mud. Their average height is 81 cm and their bases at a level of 2.81 m above zero line.

The little group of walls, "Q," is the most extensive of the later walls on the mound. They are 70 cm thick. A central chamber entered from the east is divided into two by a short partition wall, and on either side are two other chambers which must have been entered from the south. The bricks of which these rooms were built measured 23 x 16.50 x 4-7 and 21 x 16 x 3.50-6 centimetres. They are a little wider than those used in the old building, and may have been specially brought there for the erection of this house. The bricks are loosely laid, but the walls are square. Near the centre of the chamber at the east was a large bowl-like vessel with a ring base measuring 85 cm in diameter and 40 cm in depth on the outside. It was strengthened by four horizontal ribs, and was coated inside and out with bitumen. The vessel is of the same type as those found in chamber 30 (Plate XXXI, Fig. 2) in the building below, except for the addition of a ring base.

The average height of the walls is 80 cm, those on the east being the best preserved and standing 1.20 m high. From the objects found in this house there is evidence that it was built just before the mound was used as a graveyard. A series of little implements (Plate LIX, Fig. 28), all secured together by a ring, but without the usual case, was found on the mud floor. A more valuable find was a jar of ashy-gray ware with a pricked design filled in with white, but it was, most unfortunately, in pieces. This jar was found in the larger chamber to the east, and is pictured in Plates XLV, Fig. 5 and LII, Fig. 9.

It will be noticed that a large square shaft measuring 1.80 x 1.55 m is cut through the walls of one of the chambers. It extends right below the footing of the palace itself to a depth of over 6 metres. What the object of this shaft was is difficult to say. Nothing that might indicate its use was found inside it, and it had evidently been opened; for it was filled with blown alluvial soil in which fragments of pottery of Greek times were found.¹⁶ It was exceptionally well made with carefully plastered sides. That it was of later date than the building it is in is proved by its being cut at an angle through one of the walls as well as by the fact that its walls are lined with plano-convex bricks of the unusual size of 26 x 17.50 x 4.50-7 cm—a very large-sized brick indeed.

The two walls "R" and "S," one of which is superimposed on the other, must represent two occupations. The lower wall, which is represented in black, is constructed of bricks averaging 23 x 17 x 4-9 centimetres. Their width is unusual, and the upper surface very markedly convex. One brick taken from this wall measures as much as 27 x 16.50 x 6-8 cm, and a brick of exactly the same size was also found in the "Q" building. As no bricks of such a large size were met with in the palace, they must have been especially made for the later buildings. This wall is 68 cm high, and its foundations are at a level of 1.96 m above datum. The upper wall, which is hatched in the plan, was built of bricks whose dimensions were 21 x 15.50 x 4.50-7 centimetres. It was built directly on the lower wall and at a slight angle to it. Its average height is 61 centimetres.

To the west of these two walls there is a column of sun-dried bricks measuring 21 x 15.50 x 4.50-7 centimetres. This is marked "V." It is loosely built, and measures 93 cm in diameter. It cannot have had anything to do with the passage in

which it stood and must have formed part of a later building above, probably one of which either wall "R" or wall "S" once formed a part. The column when found is 1.22 m high, and its base was at a level of 86 cm above datum and 58 cm above the footing of the palace.

The clearing of a shaft in the neighborhood of the palace involved the making of a number of measurements. Several important questions suggested themselves with regard to the time of construction, and the relationship of the shaft to the palace. In the first place it is not quite clear whether the shaft was originally intended to be a part of the main building. Before this matter could be determined a careful examination of the contents of the shaft was necessary. The queries are: Was the shaft used for burial purposes? Could the shaft have been part of a drainage system?

To the east of the walls "R" and "S" was cleared a rectangular shaft, "U," measuring in section 2.70 x 1.70 metres. Its depth was 7.70 m and the surface of the ground here was 2.84 cm above the datum. This shaft, as will be seen in the plan, was cut down through the thick outer wall of the palace, but can hardly have any intended connection with it, as it is not square with the building. It was found to be full of a light blown soil, and the only object found in it was a broken cylinder seal very long for its diameter and incised with a geometrical pattern. This shaft was probably cut at the same time as the square shaft, "T," to the north of it. Whether they were used for drainage purposes or as burial pits, it is impossible to say with certainty, but the presence of the cylinder seal in shaft "U" is suggestive of a burial which was probably pilfered in very ancient times. No trace, however, was found of any bones.

Just outside the western wall of the annex were found three furnaces or kilns marked with the letters "X" and "Y." All were empty when found and in bad condition. The bricks used in their construction are of the two sizes used in the palace, namely 20.50 x 13 x 3.50-6 cm and 23 x 15 x 4-6.50 cm, and were set in mud mortar only. These bricks are very badly baked in places, and the kilns would seem to have been constructed of unbaked bricks, which were gradually baked when the kiln was put into use. The design of these kilns was the same in each case, and kiln "X" may be taken as typical. Its external measurements are 3.70 x 2.40 metres. The inside forms a sort of tunnel, measuring 3.70 m by 75 cm, about 90 cm in height. Its roof is spanned by a series of semicircular arches from 20 to 24 cm wide, the spaces between the arches being from 18 to 21 cm wide. On the western side there is a horizontal flue just below the base of the arches measuring 12 by 16 cm and constructed of bricks, broken and whole, placed corbel-wise. This flue communicates with the interior of the kiln all the way along it and is carried for a considerable distance beyond, to the south in the case of kiln "X," and to the north in that of kiln "Y." How far these flues originally ran is impossible to say. Indeed, that of the third kiln had totally disappeared. The arches were covered loosely with burnt bricks, but any superstructure that there may have been above these had been destroyed. Each arch is 36 cm high from its spring, which itself is 53 cm above the floor of the furnace.

The other two kilns to the south, lettered "Y," were of the same design, but slightly larger.

The levels of kiln "X" are as follows: surface of ground 75 cm above datum; top of arch 57 cm below datum; lower surface of arched roof 71 cm below datum; level of floor at side of kiln 76 cm below datum; floor of furnace 161 cm below datum. The levels of the building alongside these kilns are: top of wall 69 cm above datum; top of footing 54 cm below datum; base of footing 160 below datum.

Unfortunately, nothing was found in these kilns beyond a little ash, and it is not known whether they were used for baking pottery or bricks. I am inclined to think that they were intended for the former, as they are so small, and as there is a great amount of broken pottery in their vicinity. They seem to have been used in this way—the fuel was placed in the tunnel from both ends, which was then sealed up, leaving a small aperture for a draught; the pottery or bricks were then placed in a superstructure above the arches, this superstructure having since disappeared. The flues at the sides of the kilns must have been intended chiefly to carry off the smoke of the burning fuel; they were probably damped down when the smoke had ceased, and the fuel was glowing hot.¹⁷ These kilns were built after the palace had fallen, probably with bricks taken from it. They were no longer in use when the mound was used as a burial ground, for graves 69 and 70 were cut right into them. The entrance to kiln "X" is seen in Plate XXXI, Fig. 1. The illustration also shows a portion of the flue belonging to kiln "E."

In chamber 31, there were found the remains of two furnaces of an entirely different type, but they were unfortunately in a very damaged state. These are marked "J" and "K;" "K" is illustrated in Plate XXX, Fig. 1. That these furnaces are of later date than the palace is proved by the fact that one of them ("J") is partially built into the eastern wall of a chamber. From their size, these two kilns were presumably used for baking bricks. They were constructed of sun-dried bricks taken from the ancient walls around, which were used in a single layer to line irregularly rounded holes in the ground. The bricks were laid in every conceivable way, some obliquely on their edges, others vertically and some in the normal position. The bricks used measure 18 x 13.50 x 5-8 cm, 25 x 13 x 3-5 cm, 23 x 15 x 3-5 cm, etc. The first two sizes do not occur in the palace. They must therefore have been brought to the spot for the purpose of building these kilns. All the bricks are burnt a dull red, and are in a very friable state. The kilns therefore do not seem to have been used more than once, after which they were left derelict. How they were used is difficult to say, as nothing remains of flues or superstructures. Probably these brick-lined cavities were stacked with bricks through entrances to the north, the necessary fuel being mixed with the bricks. Then, with the provision of air-holes above and below, the kilns were roofed over and fired. The levels of "K" are: surface of ground, 237 cm above datum; top of kiln, 159 cm above datum; base of kiln 13 cm below datum.

The two walls "L" and "M" have been discussed in the chapter devoted to the description of the palace. The block of brickwork "N" is difficult to explain. It was a platform constructed entirely of plano-convex bricks, and measures 4.40

x 3.10 m, 20 cm high. The bricks of which it was made were of two sizes: namely, 23 x 15 x 4-7 cm, and 21 x 13 x 3.50-5 cm; broken bricks were also used. The level of the top of this platform is 151 cm above datum, or 20 cm above the foundations of the adjacent walling "G" to which it probably belongs. On the north-east corner of this platform a burial was found (No. 23), which proves that the pavement cannot be of later date than the period of the cemetery. This burial had also slightly disturbed the brickwork of the ramp above the stairway.

The walling "G" is made of sun-dried bricks, measuring 20 x 15 x 4-5.50 centimetres. For the most part its width is 70 m, but in one place it is 1.40 cm wide. It evidently formed part of a building which was erected there after the palace had fallen into decay. A doorway toward the eastern end of the main wall measures 80 cm in width. The average height of these walls is a little over a metre, and their foundations are at a level of 131 cm above datum. East of platform "N" and contiguous to and exactly opposite the middle of it was a large basin "H" with a flat base, measuring 105 cm in diameter at the top and 130 cm at the base. It is made of plano-convex bricks, both broken and whole, and is thickly plastered with bitumen. The depth of the basin is 49 centimetres. Its upper edge is at a level of 151 cm above datum and on the same level as the platform to which it evidently belonged.

The two hatched walls denoted by the letter "A" between them are built of bricks measuring 25 x 25 x 10 cm, whose upper and lower surfaces are perfectly flat. Square bricks of this size have been found nowhere else in Kish, except in the square column marked "F" on the plan, and for this reason it is at present impossible to date them. I would regard these bricks as being the link between the largest-sized plano-convex brick and the large Sargonic brick, and, therefore, as belonging to the pre-Sargonic period. Both these walls are 50 cm, or two bricks thick, and their average height is 144 centimetres. The foundations of the walls are an average of 33 cm below datum. The column "F" measures 1 m square and 99 cm high. Its base is at a level of 53 cm below datum.

To the east of the two walls "A" is seen a group of walls belonging to two different periods. The wall "C" at the west is 18 by 1.15 m, and is built of well-made sun-dried bricks measuring 27 x 9.50 x 10 centimetres. It is evidently an important structure and may possibly have been a boundary wall. It is illustrated in Plate XXVI, Figs. 1-3, but the short flights of steps on the eastern side of it in Fig. 1 were merely made for the convenience of our workmen. At its southern end, the wall stands 1.02 m high, with its foundations at a level of 1.29 below datum. At the northern end the wall is 2.66 m high, and the foundations 76 cm below datum. These levels show that the wall was built upon sloping ground, which is quite a likely procedure in the case of a boundary wall for which the earth need not be levelled. As regards its date, we are on surer ground. The same size of brick was used in building this wall as has been found in the ruined building dated to the period of Hammurabi (2180 B.C.) on the south-west side of the Ziggurat at Tell Ahaimir.

The irregular group of walls to the east of "C" (lettered "B") are built of well-made unbaked bricks measuring 39 x 23 x 8 centimetres. These walls, of which

three stand at right angles to a longer wall of irregular thickness, average 34 cm in height, and foundations are at a level of 86 cm below datum. In the space between the two southernmost walls there was a bitumen pavement, 2 cm thick, at a level of 77 cm below datum. From the size of the bricks I would date this group of walls to a period of a little later than Hammurabi, perhaps that of Samsuiluna. Farther to the east is a remnant of an important building, marked "E." Its widest part is 1.50 m thick, and a doorway was found in it measuring 80 cm in width. The size of the bricks of which this wall is built is 27 x 19.50 x 10 cm; that is, exactly the same size as in wall "C" with which it was probably once connected. This wall when found stood about 72 cm high, with its base 36 cm below datum.

The enclosure marked "W" in the plan is a pit that contains a number of graves of the Greek period. It measures roughly 8.40 x 5 m, with walls averaging from 30 to 50 cm in height. No bricks were found in the sides of the pit; they seem to have been simply of mother earth coated with a thick layer of mud plaster. Owing to denudation it is not known how high the walls of this chamber formerly were. When discovered, the top of the wall was 2.49 m above datum, whereas the surface of the ground was 2.71 m above. The entrance to this pit is at the north, and a recess there seems to have been intended to take a door. The floor is paved with bricks of a late date, both whole and broken, whose dimensions are 31 x 31 x 8 centimetres. The same-sized brick is also found in the large mound "W," to the west of the "A" mound, which is entirely composed of Neo-Babylonian buildings, and the bricks of this burial chamber were probably taken from that site.

On the pavement at the south of the chamber there is a column measuring 90 by 70 cm, which stands 34 cm high, that is, four courses in height. At the north is what appears to be a small piece of walling, measuring 25 cm in thickness and 55 cm in length, built of broken brick plastered with mud. The top of this wall is 2.40 cm above datum. The pavement is in some places laid more than two bricks deep, and its surface is at a level of 2.28 m above. Only mud mortar is used in laying the pavement of which, however, a good portion has been removed, probably by brick robbers. In the northern portion of the chamber were found the bones of at least six bodies much confused as if they had been placed on top of one another, and orientated N. E. to S. W. The objects found with these bodies had been weathered badly. Some are shown in Plates XX and XVII, Figs. 8-14 and XLVII, Fig. 8; they are fully described in the last chapter.

In many parts of mound "A" were found pottery drains evidently belonging to later buildings which have been denuded away. Though these drains in the present state of our knowledge are of little use for chronological purposes, they have been marked in black in the skeleton plan of the palace, and are fully described below. In the north-west corner of chamber 7 there is a vertical pottery drain made up of segments, 53 cm in diameter and 40 cm high, and open above and below. In each segment there is a pair of small holes for additional drainage in the middle of each of the opposite sides. The space between the debris filling the chamber and the segments was filled in with broken pottery, and into this

loose material the water soaked away through the holes in the various segments. The upper rim of each segment of this drain consists of a rounded beading 5 cm deep and 5 cm thick.

Considerable disturbance was caused in chamber 16 by the sinking of a vertical drain whose segments measure 64 cm in diameter by 18 cm in height. In this case each segment has a thick beading at the lower as well as the upper rim. None of the segments fitted one another, but merely rested one upon the other. The drain in the north-east corner of chamber 43 is of unusual design. Each segment is 72 cm in diameter and 30 cm high. The upper edge is strengthened with a thick beading, but the lower edge is rimless, and fits into the top of the segment immediately below. For additional strength there is a heavy beading around the middle of each segment. The bottom of this drain is at a level of 23 cm below datum.

Four drains were found in the large pillared hall. The two to the north were evidently of the same date as they correspond in make and size, and they reach to 1.64 m below datum. They measure 53 cm in diameter, and are composed of segments 43 cm high, which are slightly cone-shaped and very roughly made. Contrary to the usual practice with cone-shaped segments, the smaller ends of successive segments are placed together, instead of their fitting into the larger ends. The two drains to the south are of slightly different make. The segments measure 50 cm in diameter and 23 cm in height, and both rims of each segment are heavily beaded. The level to which they were sunk averages 145 cm below datum.

High up above chamber 49, three segments of a vertical drain were found, each 70 cm in diameter and 35 cm high. Both rims are thickened, and there is a beading around the middle of each segment. These segments are slightly conical so that they fitted about 2 cm one inside another. The level of the base of the lowest segment is 89 cm above zero. The larger drain in chamber 52 is composed of segments 60 cm in diameter and 21 cm high. The upper rim of each is strengthened by a rounded beading 4 cm wide and deep. The lower end of this drain is about the level of the top of the footing of the chamber; that is, 79 cm below datum.

The second drain measures 49 cm in diameter, and each segment is 46.50 cm high with a plain lower rim and heavily-beaded upper one. It penetrated far below the foundations of the palace, and its base was never found. In the south-west corner of chamber 61 there were four segments of a pottery drain, each 72 cm in diameter and 37 cm high. Both rims are heavy and rounded, and each segment rests on the edge of the one below. The thickness of the pottery in the middle region of a segment is 1.50 centimetres. The lower edge of the lowest segment is 138 cm below datum. The copper or bronze adze shown in Plate XXXIX, Fig. 2, was found in a sandy deposit about the middle of the lowest segment. These drains do not resemble one another closely, except for the segments of those in chambers 43 and 49 being of much the same size and conspicuous for the beading around the middle of the segments. The largest segments were found in the drains in chambers 43, 49 and 61, their average diameter being 71 cm by an average of 34 cm in height.

In the segments found in the last two chambers, both upper and lower rims are strengthened with heavy beading.

In many cases, considerable damage had been done to the walls of the palace in the process of sinking these drains. As the majority go a considerable distance down, a very large hole had to be made before the lowest segment could be laid. The hole had also to be of considerably larger diameter than that of the segments, in order that a packing of pottery fragments might be placed around the segments for additional drainage, which was done to within a few feet of the top. There are, unfortunately, as said before, no means of accurately dating these drains, for the houses to which they once belonged disappeared many centuries ago. It is probable that the majority of them belong to some period prior to that of Nebuchadnezzar II, as no trace of any work from the time of that monarch has been found on the "A" mound.

OBJECTS OF THE PALACE PERIOD

With the exception of the graves of later date, the palace proved to be a very disappointing site as regards the finding of movable objects. Room after room, as it was cleared, proved to be bare; and, what was still more strange, with the exception of one or two pieces, no pottery was found that could with certainty be referred to the palace period. One could readily understand the lack of valuables, as these might naturally have been looted and taken away; but it is hardly likely that much attention would be paid to pottery. Even if this had been considered of value, some of it would surely have been broken and left behind. The lack of pottery is most unfortunate, for it was badly needed to help in dating the building and also for comparison with the pottery in the later graves, of which there is no lack.¹⁸

Perhaps the most interesting object found in the palace, and obviously part of its decoration, was the fragment of slate and limestone inlay work represented in Plate XX, Figs. 2-3. It was found lying face downward close to the N. W. corner of the chamber marked 35 in the plan and but a few centimetres below the surface of the ground. Its dimensions are 64 by 33 cm, it is 3 cm thick. The dark-gray slate in which the inlay is set is laminated in several places, which points to its having been subjected to heat. The inlay is of fine, white limestone. A part of the lower edge of the plaque is perfect, but all the other edges are badly broken. The centre of the plaque was cut out—its edges are quite smooth—and the space so formed must have contained a small scene or, more probably, the name of the king with an inscription explaining the meaning of the scenes. The line across the upper part of the plaque above the king's head gives the impression that this was not the only register. The groundwork of the plaque is made up of irregular pieces of slate cut so as to fit together. The top left-hand side of the plaque is a smooth cut edge. Channels were roughly hollowed in the slate to the depth of 7 mm to take the limestone inlay, and were in most cases considerably larger than the inlay they accommodated. The inlay is variable in thickness. The different pieces that go to make up the same figure even range from 4 to 6 mm in

thickness. From traces of bitumen found still adhering to the back of the pieces of inlay there can be no doubt that this substance was used to cement the inlay in its slate bed. It was probably poured in while the pieces were held in place by the fingers. It is possible also that the whole surface of the slate was painted over with bitumen to hide the joints of the background as well as the joints between the inlay and its groundwork.

The inlay, itself, it will be noticed, is also made up of irregular pieces of limestone, and considerable ingenuity is shown in contriving the joints where they would be the least apparent. The smaller details of the scenes were drawn in fine incised lines about 1 mm deep, but to portray the larger ones, such as the beards, the stone was scooped out to a depth of about 2.50 millimetres. These latter details were filled in with thick, black paint, traces of which were found still adhering in many places. This engraving seems to have been done after the inlay was cemented into position. The inlay shows no signs of having been rubbed down after being fixed, for each piece is of the same thickness throughout and perfectly flat on either surface, nor were there any holes or grooves cut to give firmer hold to the bitumen cement. The scene is of a monarch holding a prisoner with the right hand and grasping a battle-axe with a long wooden handle in the left one. The head-dress is most curious, but unfortunately a small fragment is missing from the centre. There is, however, little doubt that the top was a simple curve, as in the figure found elsewhere in the palace and shown in Plate XX, Fig. 3. The king is naked above the waist, which is encircled by what appears to be a thick, heavy girdle. Below this hangs a long pleated kilt, whose front panel is held up by the hand that holds the battle-axe to give greater freedom of action. Unfortunately, little remains of the prisoner held by the king. He is represented as nude, except for a cincture about the waist, and his hands are tied behind his back with a double coil of rope. It is noticeable also that he is uncircumcised. On the right of the plaque is a similar prisoner, but much more nearly complete. This second figure also is nude but for a belt around the waist. The head is represented as bare, except for a long lock of hair hanging down on the left of the face to the same level as the beard.¹⁹ This feature is also represented in the portrait of the king. The beard is long and narrow, and arranged exactly as in the case of the king. This prisoner too has his hands tied behind his back.

All the figures are of an extremely archaic character, and are represented with a great deal of vigor. The drawing is good, and though the muscles are not shown, details such as the knee-cap, ankle-bone, etc., are portrayed. As in all primitive figures, the eye is unduly large; great prominence is also given to the nose, and but little to the mouth. The pupil of the eye is represented by a hole into which a piece of lapis lazuli was formerly fitted. This stone was commonly used for this purpose, even in animal figures. Its color does not necessarily imply that the originals had blue eyes, for it is the pupil, not the iris, which is made of lapis lazuli. The king has his right foot slightly raised as if it were resting upon something. Unfortunately, the plaque is broken away here, but it is possible that the foot was placed upon a fallen captive. The king's attitude calls to mind the

figure of Naram-Sin in the Stele of the Vultures. Whether the figures be Semitic or Sumerian, others may judge. The scene, however, shows that the conqueror and the conquered were of the same race, for the locks of hair, beard, and general treatment are identical in the two. The dress alone distinguishes one from the other. The prominent cheek-bones are noteworthy. They appear more prominent than they actually are by reason of the inlay being hollowed beneath them to provide a setting for the bitumen that formed the beard. The base of this setting has been furrowed to give the bitumen a hold.²⁰

It is not known which position this plaque occupied upon the wall; nor is there any indication on the plaque itself as to how it was attached to the wall. It is possible that it formed part of a long scene, with a great deal of repetition as shown by this fragment. Moreover it is certain that the piece illustrated was the lower part of a scene, but whether there were one or more registers above is not known. This fine example of early work was found just after the commencement of the work upon the palace (Reg. No. 1501; Baghdad).

In Plate XX, Fig. 1 will be seen fragments of inlay of mother-of-pearl, which were found a little way north-east of the plaque in a position suggesting that they had been washed down by rain. Their state of preservation, as will be seen in the photograph, is excellent, though no more pieces than those illustrated were found, beyond a few that were unimportant. The fact that these figures form part of a single scene is obvious. First, we have on the left of the illustration the right arm and shoulder of a man who, judging from his size compared with the other figures, must have been a person of importance. The upper border of his dress is extremely ornamental. The chief point of interest is the presence of the three signs "Lugal-ud-lugal" incised on the shoulder; the remainder of the inscription unfortunately is missing. As these fragments of inlays are evidently of the same date as the plaque described, it may be suggested that this figure possibly represents the last king of the second dynasty of Kish, who in the Weld-Blundell prism is called "Lugal-mu." If this be so, the palace might be dated to approximately 3500 B.C.

The female figures in this inlay are extremely interesting. The curious head-dresses are quite a novel feature, and appear to be some form of crown. The empty space between the head and the crown represents the hair. It was originally filled with bitumen as in the case of the beards in the plaque. These crowns appear to be made up of a fillet around the head, from the middle of the front of which arises an ornament that is turned backward over the top of the hair and terminates in a piece like the tail of a fish at the back of the fillet. Whether the strip which projects downward from the fillet at the back of the head is part of the crown is difficult to say, but I am inclined to regard it as merely an outline to the hair, which was necessary to avoid confusion between the bitumen representing the hair and that in which the inlay was set. This is more strongly suggested in the case of a similar figure found in the annex of the palace and shown in Plates XX-XVI, Figs. 4 and 6.

All the female figures wear necklaces of beads, in a double row in two cases. Two of the figures also have ear-rings. The figure on the right is shown with

slightly flexed right arm holding a cup with a pointed base. Pottery cups of this shape were found in the palace, and will be described below in this chapter. The figure of the woman at the bottom of the illustration is the most complete. She is holding in either hand a curious object which may be of pottery or metal. I am inclined to see in these objects a strong resemblance to the metal implements, which were found in some later graves at "A" shown in Plates XXXIX and LXI. It is true that the shape is not exactly the same, but this may be accounted for by the difference in date. All these figures once had lapis-lazuli pupils in their eyes, and in the female head to the left at the bottom of the illustration the lapis-lazuli pupil still remains. In this fragment the same form of diadem appears to have been worn, but the necklet is not of beads. The male figure above this wears the well known "kaunakes" consisting of a single row of fringes, showing that this figure belongs to a very early period. This garment was evidently worn by someone of importance, for it shows considerable detail of ornament. The outstretched arm at the top of the illustration is, unlike the rest of the fragments, cut round and the modelling is extremely beautiful. It belongs to a figure the rest of which could not be found—a fact much to be regretted, for this fragment shows a greatly superior technique to that of the other fragments. The calf's head at the top of the illustration has been placed in this group by mistake; it comes from another site (the large building of plano-convex bricks at "P").

As mentioned, all these fragments of inlay were cut out of mother-of-pearl, and though slightly yellow in color, they still show a good deal of polish. Their surfaces are not perfectly plane, as in the case of the plaque; here and there they follow the curvature of the shells from which they were cut. Mother-of-pearl is an extremely difficult substance to work: first, on account of its extreme brittleness; second, on account of its lamination. It must have required considerable skill to fret out the outlines of the figures, especially the details of the diadems, and it is noteworthy that in several cases parts of the figures, which should have been cut out, had the ground lowered instead.

These fragments varied in thickness from 2 to 4 millimetres. They were originally set either in wood, or more probably in bitumen. Whether they formed part of a mural decoration or served to adorn a piece of furniture is not known, but it shows that even in the archaic period Mesopotamian civilization was capable of producing shell ornamentation quite equal to that produced in Syria at the present day (Reg. No. 1531; Baghdad).

The animals shown in Plates XX-XVI, Figs. 1 and 6, were found lying principally along the northern wall of chamber 61, tumbled together with broken pieces of slate in which they were once set. The figures illustrated are the best of many fragments found in that chamber, which included portions of human figures in limestone of the same technique and apparently the same design as the plaque illustrated in Plates XX-XV, Figs. 2-3 and figures in mother-of-pearl (Plate XXXVI, Figs. 3-6). They were associated with fragments of pottery cups of the pointed forms shown in Plate XXXVII, Fig. 6, and with one spouted jar of the early type which, however, was too broken to be restored. A small piece of iron

was found adhering to one of the slate fragments, and was pointed out to me by Colonel Lane before he removed it from its position. The other pieces of iron of the same button-like form were found with the fragments of inlay before the chamber was finally cleared. These pieces of iron, which were undoubtedly the same age as the inlay work, may possibly have been the heads of nails, but no traces of a shank could be found with any of them. They could hardly have been pieces of ore or meteoric iron kept as curiosities, for they were practically of the same button-like shape and size, averaging 22 mm in diameter and 10 mm in height. One of them is figured in Plate XXXVI (the lowest of the three objects in Fig. 2).

The animal figures shown in the plate are made of shell; on this account most of them show a certain amount of curvature. They are beautifully cut, and evidently formed part of a domestic scene similar to the one found by Woolley at Tell el-Obeid. The largest figure shows a goat being milked from behind, a practice which is still pursued in Iraq and also in India. In the larger figures, the spaces between the legs were fretted out, but this was not done in the smaller figures, presumably on account of the brittleness of the material. The animals in repose especially show a great fidelity to nature. The larger animals have the pupil of the eye inlaid with lapis lazuli, which was found in place when the earth was removed from the figures. Some of the smaller figures had also been treated in the same way, but in the majority of cases the form of the eye alone was represented. Among the animals found were a bull, sheep, and goats, and what may possibly have been a dog with a curly tail and apparently a saddle on its back (Plate XXXVI, Fig. 6). The arms and shoulders of a man beautifully cut in shell merit special attention. The object held in the two hands probably represents the blossom of the palm that may have been used in some rite observed during the season for the artificial fertilization of the palm-trees. The figure of a woman (Plate XXXVI, Figs. 4 and 6) holding the same two objects as are held by the female figure in Plate XXXV, Fig. 1, is duplicated for the sake of clearness. The groundwork of the mother-of-pearl in which this figure is cut has not been entirely cut away as in the other similar figures, with the result that the woman appears to be wearing her hair loosely gathered up behind in a sort of chignon.

All this inlay work evidently formed part of the decoration of the chamber in which it was found, but it was impossible to trace its exact position on the walls. Woolley found the inlaid plaque of Tell el-Obeid on the outside of a building, and has placed it high on the walls in his restoration.²¹ This was about the position of our inlay, for if it were set too low there would be great risk of damage to a frieze of this description; the inlay could be readily picked out with the fingers.

It would seem that this inlay was wilfully broken up and destroyed. A fall would hardly account for the damage done to the smaller figures; for instance, the breaking of a limb into two or more pieces. Only the more solid figures were perfect, probably because they were considered unimportant and difficult to break up. Fire might account for much of the damage, but none of the inlay shows any signs of being burned. The destruction done seems to be entirely due to a systematic vandalism. The fragments of the inlay were found on a flooring

made up of two courses of mud brick, at a level of 15 cm below datum. It is impossible to say whether the many pieces of bitumen found with them were part of the setting of the inlay (Reg. No. 1502; Oxford). The alabaster dishes of which fragments were found with the inlay are shown restored in Plate LV, Figs. 5 and 9. Of these, Fig. 5 once held a fatty substance of a light brown color. This dish was badly corroded by salt.

Two copper nails similar to that in Plate XXXVI, Fig. 2, were found with the inlay, and may have been used to fasten or ornament it in some way.

The fragment of a dish illustrated in Plate XXXVI, Fig. 11, was found at a level of 141 cm below datum close to the southernmost pillar of the colonnade. It stands 10 cm high, and is made of bituminous limestone. Its shape was either square or rectangular with rounded sides. The inside of the dish is smooth, but the outside is carved in relief with a scroll pattern which is exceptionally fine. The workmanship is exceedingly good, both as regards design and regularity (Reg. No. 1037; Oxford).²²

The pictograph tablet, whose obverse and reverse are pictured in Plate XXXVI, Figs. 7-8, may or may not have belonged to the palace. It was found at the eastern end of chamber 40, 50 cm below the surface of the ground and at a level of 78 cm above datum level. It was made from a piece of cherty limestone, and measures 63 by 59.50 millimetres. It is 31.50 mm thick in the middle, and 15 mm at the edges. Its shape is cushion-like, the upper and lower faces being rounded, and the sides flat. This tablet has been discussed from a philological point of view by S. Langdon.²³ It is somewhat chipped in places, and has evidently been used as a hammer-stone. It was found lying under a piece of quartzite. The presence of the hammer marks and its position probably indicate that it was brought there from elsewhere. It is very doubtful whether the very archaic signs upon the tablet do not belong to a period considerably older than the palace. The remains of this period may even now exist below the palace (Reg. No. 1131; Baghdad).

Part of Plate XXXVII also is devoted to objects which were found in the palace and which, according to the evidence of the positions in which they were found, presumably belong to that period. Fig. 1 is a restoration of a well-made dish of fine gray limestone of which several fragments were found on the floor of chamber 19. Its surface is smooth, but unpolished, and it measures 20 cm in diameter at the rim and 6.20 cm at the base. It stands 7.70 cm high. The fact that the pieces of this dish were scattered about the floor of the chamber and not all found in the same place is sufficient evidence that it belongs to the palace period (Reg. No. 2669). Fig. 2 is a mace-head of brown sandstone, measuring 45 mm in height. It is exceedingly well made, and has a hole 10 mm in diameter bored nearly half way through from the base. It was found just below the surface of the northern limit of mound "A," and had evidently been washed out of a denuded chamber (Reg. No. 914; Baghdad). The evidence that this mace-head actually belongs to the palace is not very strong, it is true; but it should be compared with Fig. 3, found 3 m below the surface of the ground and close to the top of the footing of chamber 57; it undoubtedly belonged to an inmate of the palace.

This latter mace-head measures 69 mm in height by 61 mm in diameter at its widest part. It is pear-shaped and made of fine, white limestone which is almost polished. The hole through its centre is 11 mm in diameter in the middle, and splays out above and below to a diameter of about 13 millimetres. This mace-head has been slightly chipped at one side, and its surface shows in places that an abrasive was used to rub it smooth (Reg. No. 1389; Field).

Half of another mace-head of a very similar shape was found just above chamber 45. Its height is 48 millimetres. The hole for the haft, which is bored from either side so that the two borings meet in the middle, is far from central. This is probably accidental, but may have been intended to make the striking side larger and so to give the weapon the appearance of an axe. An illustration of this mace-head will be found in Plate XXXVIII, Fig. 11. The material is a cherty limestone, brown in color.

A fourth mace-head is illustrated in Plate XXXVIII, No. 11. Its height is 74 mm and its greatest diameter 58 millimetres. It was made of soft white limestone, and there is a large hole for the haft running right through it from the narrow end. This hole tapers towards the top exactly as in the early mace-heads of Egypt, with which it agrees also in other respects (Reg. No. 2475; Field). This mace-head was found at a level of the footing of chamber 27, at a depth of 2.50 m below the surface of the ground. Two broken pottery cups with pointed bases (Plate XXXVII, Figs. 4-5) were found together at a level of 1.40 m below datum, close to the southernmost column of the colonnade. They are of very thin and well-baked ware of a salmon-pink color. Both surfaces are fairly smooth and finished, but show slight wheel-striations (Reg. Nos. 1121 A and B). These two pottery cups were associated with rough dishes whose flat bases show focused grooves (Reg. No. 1121E; Field). From the fact that similar cups to these were found at a low level in a building of plano-convex bricks of early type some way north of the palace, it is certain that this pattern is an early one. Not a single example of this type of pottery has as yet been found in graves of later date in the ruins of the palace. A very similar pointed cup is shown on a bas-relief found at Nippur, and is pictured being held in one of the hands of the figures, as in the case of the female figure described above (Plate XXXV, Fig. 1).

The piece of mother-of-pearl in Plate XXXVII, Fig. 1, was found close to one of the pillars of the colonnade. It measures 43 by 40 mm, and is complete in itself. The incised design depicts a coiled beard or locks of hair which may belong to a bearded bull or to a figure of Gilgamesh (Reg. No. 1081; Oxford).²⁴ As mentioned above, six water-worn pebbles were found on the floor of chamber 15, some of which were marked with lines, suggesting that they were weights. These are reproduced in Plate XLII, Figs. 10-15 (Fig. 10 has as many as seven parallel lines incised upon it) and their weights are as follows:—

10 (2598 d)	3 drams	18 grains
11 (2598 f)	1 dram	5 grains
12 (2598 a)	4 drams	50 grains
13 (2598 e)	1 ounce, 1 dram	28 grains
14 (2598 c)	2 ounces, 5 drams	51 grains
15 (2598 b)	2 ounces, 2 drams	25 grains

With these pebbles were found three copper ingots (Plate XXXVIII, Fig. 2) the largest of which measures 12 cm in length and 1.90 cm in thickness. These ingots seem to have been run into simple moulds, probably holes in the ground. The lower end had been wrenched off one of them, and it is badly cracked as also is the third. As weights and ingots were found together, it is possible that the latter were used as currency (Reg. No. 2586; Field).

II. THE "A" CEMETERY KISH (Continued)

THE GRAVES

A total number of 154 graves has been found in the course of excavating the palace in mound "A." Thirty-eight of these burials were cleared and recorded in the season 1923-24, and are fully described in No. 1 of this volume. In the present issue the remaining 116 burials, which were found during the season 1924-25, are dealt with. They are all cleared and recorded by D. T. Rice whose services have been of great value to the expedition, as he is a trained anthropologist. The bones and skulls of the burials, therefore, received the attention they merit; this subject will be fully dealt with by Rice in a special publication. The numbering of the graves in this chapter starts from 39, it being thought desirable to carry on consecutive numbering rather than to begin afresh each season. This arrangement avoids possible confusion in referring to any particular grave.

Out of the 116 graves, 4 were of late date (Nos. 41, 44, 111, and 114); these will be described together at the end of this chapter. Of the remaining 112 interments, 56 were found intact, 12 had been slightly, and 44 badly disturbed. There is little doubt that mound "A" contained a great many more burials than it is possible to record. Many of these unrecorded burials had been badly denuded, and their pottery and other objects which met this fate are in nearly every case identical in form with those actually found in the graves. In some cases the contents of graves may have been thrown out by later comers. On the summit of the mound, moreover, were found the remains of walls of sun-dried, plano-convex bricks, more or less preserved, which are of the same date as, or even earlier than, the graves, as shown by the objects found among them. All this material found, whether it comes from burials or not, is of the utmost value, especially as it belongs to a period of the history of Kish, which, judging from the pottery, was not a very long one.

Unfortunately, it has not been possible to fix the exact date of the graves in any particular region, for none of the objects found in them bears inscriptions. There is, however, a rough means of dating them by comparing them with objects found at Lagash, especially the fragments of the famous Stele of the Vultures. In this stele, Eannatum II carries in his right hand a very curious staff shaped somewhat like the letter S and evidently composed of three flat pieces lashed together at intervals.²⁵ What appear to be similar weapons have been found in some of the graves in the "A" mound; they are illustrated in Plates XXXIX, Fig. 6, and LXI, Figs. 2-4, 10-11 (see p. 161). Carried in a quiver attached to the fore part of the chariot of Eannatum, the stele shows a number of arrows with double-pointed heads. A similar arrow-head to these may be seen in Plates XXXIX, Fig. 4 and LXI, Fig. 14. It was found at a depth of 30 cm below the surface of the mound, and although it cannot be dated with certainty to the period of the burials, there is a probability that it is of that date. Again, the battle axes carried by the soldiers

of Eannatum are identical with those represented in Plate LXI, Fig. 7, the majority of which were found in burials in the "A" mound. From this evidence, I think, the date of the "A" cemetery can safely be placed in the period of Kug-Bau of the third dynasty of Kish, who was contemporary with Eannatum II of Lagash, that is, about 3000 B.C. There is, however, another link in our chain of evidence. In Plate LIV, Fig. 57, a peculiar pottery jar is shown; it is exactly similar to a specimen, or specimens, found by Woolley at Tell el-Obeid and dated by him to the period of Mesannipadda on account of an inscribed gold seal which was found in one of the graves. Woolley's series of graves is not so old as he at first thought, for Mesannipadda is now placed by Sumerian scholars as contemporary with Kug-Bau and Eannatum II of Lagash. The evidence of pottery is perhaps more decisive than that of other objects, owing to the changes of fashion in pottery being fewer and less marked.

The preservation of the bodies varied greatly. As a rule, those lying at a depth of over a metre below the surface of the ground were in a better condition than those in more shallow graves. The reason for this is the presence of salt in the upper levels of the mound. When salt attacks a burial, the bones are reduced to a state of powder and appear as gray lines running through the soil. In a great many cases, therefore, it was impossible to determine the sex of a burial unless objects other than pottery had been buried with the dead. The determination of sex by associated objects, however, is not always reliable, and in so doing the greatest caution must be exercised. In a total number of 57 graves in which the bones were tolerably preserved, 36 of the burials appeared to be male, 21 female, and 16 those of children. In 38 graves there was no indication of sex. Eight of these last graves showed no trace of bones whatever, but only a group of pottery which suggests that the occupants were infants whose immature bones would easily disappear in soil of such salinity (burials 147-154).

Only one grave was found that definitely contained two bodies (No. 56), though it is suspected that when a grave contained more than one brazier or handled jar, it also once held the body of an infant in addition to the adult whose bones were found. The orientation of the bodies varied greatly, as in the case of the 38 graves cleared in the season 1923-24. The summary below shows the direction of the head in 71 burials, and the orientation of the body in 73 burials.

POSITION OF HEAD

N.	N.N.E.	N.E.	N.W.	S.	S.E.	S.W.	E.	W.	W.S.W.	
8	1	6	4	7	8	8	6	22	1	Total 71 burials

POSITION OF BODY

N.-S.	N.E.-S.W.	S.E.-N.W.	N.N.E.-S.S.W.	E.-W.	E.N.E.-W.S.W.	
14	14	13	1	30	1	Total 73 burials

The lower limbs were usually in a partially contracted position, the knees about on a level with the pelvis. In graves 55 and 56, however, the lower limbs were extremely contracted. In 51 burials, the arms also were bent, and the

hands placed in front of the face. In 4 graves (39, 48, 56 and 75), one of the hands was used as a pillow and the other placed in front of the head; and in 6 burials, one hand was in front of the face and the other arm extended straight along either beneath the body (51, 60, and 104) or on it (65, 79, and 91). In all the graves except six, the head rested either on the soil or, in rare cases, on matting made of rushes. But in 51, 52, and 88, a brazier was used as a pillow, the head resting on its stem (compare burial 19 in last season's work). In grave 69 a handled jar, and in 125 and 135 other forms of pottery were used for this purpose (type E in grave 125; type C in grave 105). In burial 60 was found a brazier lying on the neck instead of underneath it, which can perhaps be explained by its having fallen accidentally into this position.

There is evidence that 3 graves (63, 91, and 121) were lined with reeds or reed matting. In the first, all that remained of this matting was a white powder, owing to carbonization. In the two last graves, however, the evidence was very clear. Grave 115 was lined with a coating of thin mud plaster and it was, therefore possible to ascertain its dimensions, namely 130 cm long by 105 cm wide and 55 cm high. This is the only burial of which it was possible to obtain the exact limits. Burial 85, which had been disturbed, was covered with the fragments of a large pot. As there were no pieces of the pot below the bones, it must have been placed over the burial instead of the burial being placed in it, as was often done in the case of children at a later period. Burial 65 was noteworthy for the phenomenal size of the bones contained in it. The associated objects suggest that it was the grave of a female, but the bones that it was that of a male. The grave was undisturbed, and the objects found in it included pottery, a toilet case, a hair-pin, ear-rings, a necklace, a knife, a razor, color-shells, and cylinder seals.

In my account of the graves that were found last season, written before the skulls sent home were examined by Dudley Buxton, I suggested that graves which contained hair-pins, toilet cases, etc., were probably those of females; but in the light of further research and the greater number of burials available it is now certain that the males as well as the females of those days wore hair-pins, carried toilet cases, and used cosmetics. The fact that the males of the period of these burials must have worn their hair long is important, and it is difficult to reconcile this fact with the statuary of the period, which always shows the head clean shaven. One explanation, however, is possible. The people represented in the statuary of the time may have acted in some priestly capacity, and therefore had their heads shaven—a custom that was common in ancient Egypt—whereas the ordinary folk, to whom most of these graves seem to have belonged, wore their hair long. Reference once more to the Stele of the Vultures lends support to this suggestion; the spear-men behind the figure of the king all have a thick pad at the nape of the neck, which seems to represent a knot of hair.

The dead were not only placed on the tops of the walls of the old palace and inside the chambers; a favorite spot for a burial was at the base of a wall, a portion of which was scooped out to take the body and funeral furniture. Burials in this position were always well preserved, for the wall above prevented undue

weight from crushing the pottery; but they were exceedingly difficult to clear, owing to the lack of space to work in.

Every burial of importance was tied in by means of the theodolite, and its level was taken both from the surface of the ground and in relation to our datum. The levels of the graves are given for reference at the end of this chapter. It will be seen that there is a considerable variation in level, the shallowest being only 20 cm below the surface of the ground and the deepest 4.06 centimetres. This range of difference can be accounted for in general by the fact that the presence of later walling on the top of certain parts of the mound has protected these portions from excessive denudation.

It must be admitted, however, that deep interments were found where no traces of later walling existed. It would seem that the use of the "A" mound as a cemetery extended over a considerable period, during which the mound was being added to by buildings in some parts and at others being denuded away by wind and rain. It is even possible that there was a considerable population on the mound at some period subsequent to the ruin of the palace; for the deep beds of ashes and broken pottery are found here and there, together with more or less whole pieces of pottery, such as the pans illustrated in Plate LII, type G. These pans, not one of which was found in a grave, were doubtless intended solely for kitchen use, and belonged to houses all traces of which have now disappeared. Heavy ware like this was never found in graves, nor could it have formed part of the funeral equipment, though the fact that it belongs to the same period as the graves is proved by its association with many of the forms of pottery now familiar to us in connection with the burials.

A sufficient number of graves has not yet been found to formulate definitely a sequence of pottery for dating purposes; but burials 53 and 58 are helpful in this direction. The former had been much disturbed by the digging of 52, and the latter wrecked to provide a place for 56. These burials could thus definitely be said to be of earlier date than the two that were cut into them. From the presence of the gold objects found in burial 51 (Plate XLIII, Fig. 8) and the gold chain illustrated in the same plate it is probable that a considerable amount of this metal was buried in "A" cemetery, which, however, has been looted. No less than 44 out of this year's total of 116 graves were found to have been rifled. This figure does not include those graves—if such they can be called—which contained one or more objects, but no bones or signs of a burial. In all probability the number of burials in the mound ran into many hundreds of which it has been possible to clear away only a small proportion.

PIGMENT SHELLS

As was the case last season, shells were commonly found in graves of both sexes. In grave 136, three were found, and in grave 68 no less than four, but usually the two valves of a shellfish were used. Of the shells in burials 68 and 136, one or two contained kohl; another, a pasty white pigment. In each case one

does not seem ever to have contained any color. The white pigment in some of the shells shows a slight tint of green, which may be the result of decomposition. The original color, however, may have been green, which afterwards faded into white. In each of the 4 graves (51, 80, 105, 118) there was a shell containing a red pigment; in two cases with a male burial, in another with a female, and in the fourth with a child. A yellow pigment, which is a form of yellow ochre, was found in a shell in burial 9—the only example of that color that has been found. Again it was found that some of the shells appeared to have been especially prepared for burial, for a dab of black pigment was frequently found laid on the white pigment, which would hardly have occurred in actual use. In grave 91, the two valves of an oyster (*Ostrea edulis*) were found in the place of the usual Cardium. Traces of a white paste were found in each valve the largest of which measured 74 mm across. The second was slightly smaller, and was broken at one side.

In burial 135, a pair of copper saucers was found, each measuring 57 mm in length, 48 mm in width, and 18 mm in depth. They are stuck together by corrosion, face to face, in a position in which pigment shells are usually found, and in consequence their contents have not yet been examined (Reg. No. 2714; Oxford). A pair of Cardium shells made in copper and evidently belonging to a grave was found at a level of 47 cm below the surface of the mound. Both of these contained the remains of a black powder. A mould of an ordinary Cardium shell had evidently been taken and copied in metal (Reg. No. 2553; Field).

RUBBING STONES

These were again found, in the graves of adults of both sexes as well as of children. Of a total of twenty pieces of sandstone discovered, ten were close to the head, five immediately behind it, and five close to the pelvis. The texture of these stones, which resemble concreted silver sand, is much too coarse for them to have been used for depilatory purposes. That they were not used for this purpose is proved also by the fact that examples were found in the burials of three small children. Some of the stones are smooth and look as if they had been worn so by use, whereas others are irregular with the appearance of having been freshly quarried. The comparatively small number of stones found suggests that they were not always considered an essential part of the funeral equipment. Again it was found that salt had broken up many of these rubbing stones and had left them in an extremely friable state.

AMULETS

These are rather uncommon, unless it may be supposed that stone beads had talismanic powers. The two amulets numbered 3 and 4 in Plate LX are especially interesting, as they are copies of shells made in lapis lazuli. They were found among other pendants in burial 117 (Reg. No. 2510; Field). Real shells occur very rarely in necklaces, two only having been found, in burial 142. A rare amulet is a fly cut in lapis lazuli, which was found in burial 88 (Reg. No. 2262; Baghdad).

Representations of this insect were worn as amulets in Egypt in the twelfth dynasty. The frog was also used as a talisman. One example was found in each of burials 59 and 100, and two in burial 63. In all cases, the animal was small and carved in lapis lazuli; the burials were all those of children. The beetle also occurs as an amulet. The example shown in Plate LX, Fig. 50, was found in burial 63 (Reg. No. 1998; Field). The glazed example shown in the left-hand lower corner of Plate XLII, Fig. 16, is still more obvious. It was found in burial 152, which, as no bones were found though the burial was otherwise intact, was probably that of an infant (Reg. No. 2394F; Field).

The object of lapis lazuli shown in Plate LX, Fig. 61, was found with some beads that had been washed out of a burial. It was evidently used as a divider, for four small holes were bored through it to take the threads of a four-stringed necklace. The resemblance of this object to an insect warrants its inclusion in this section (Reg. No. 2196; Baghdad).

Fish resembling carp cut in lapis lazuli were found among the beads contained in burial 117 (Reg. No. 2510; Baghdad). The second object in Plate XLII, Fig. 16, is made of shell, and represents a bird, perhaps an eagle, with outstretched wings. One side of the pendant, which is flat, is a natural pink, and the other is white; there is a hole at the top. This object comes from grave 140, where it was found together with a single carnelian bead (Reg. No. 2797; Baghdad).

The third object in Plate XLII, Fig. 16, was found just below the surface of the ground covering the palace. It is made of mother-of-pearl, and represents a lamb with all four legs tucked up underneath it. There is a hole in the middle of the back to suspend it. This object is probably a piece of inlay of earlier date which had been re-used for personal ornamentation at the graves period (Reg. No. 2800; Field).

The fourth object was found with a pottery group which evidently belonged to the period of the cemetery, but with it there were no bones to mark it as a burial. It is of glaze and 20 mm long. A small hole at the top permits of its use as a bead or pendant. Undoubtedly, some species of beetle is represented here, for the thorax is clearly indicated. In fact, the form of this amulet recalls certain long-legged gray-brown beetles which frequent the excavations in large numbers (Reg. No. 2394F; Field).

The pendant which is shown as the sixth in Plate XLII, Fig. 16, is exceedingly well cut in lapis lazuli, and was found 3 m below the surface of the mound. It is 18 mm long, 16 mm high, and represents a bull in a couchant attitude with face turned to the front.²⁶ A small hole runs through the figure lengthways, by which to suspend it. Though not found in a burial, it obviously belongs to the graves period (Reg. No. 2233).

GLAZE

Glaze was again well represented in the graves, both in the form of beads for necklaces, the heads of hair-pins, and more rarely spindle-whorls. The unusual objects shown in Plate XLIII, Fig. 2, are also glazed. They were found together in

a jar in burial 92, and are practically the same size, averaging 134 mm in length by 18 mm in diameter at the base and tapering gradually to 12 mm in diameter at the tops. Each is a hollow part way through from the top. They are made of a porous white paste which was glazed either blue or green; indeed, they still bear traces here and there of an apple-green color. At a distance of about 35 mm from the top, each of these objects has a hole similar to that seen in the middle specimen of the group. The spiral inlay is of bitumen, and is an average of 2.50 mm thick. What these objects are is difficult to say; but it is probable that they are handles, though the diameter of their holes (7 mm) would not permit of the insertion of a tang of any great thickness. The jar in which they were found protected them from injury except at the apex (Reg. No. 2291; Baghdad, Field, and Oxford).

In accordance with the discoveries of last season, blue seems to have been the color chiefly used for glaze, but we found a few glazed beads now black, which may originally have been red. We also found four glazed cylinder seals. Glaze would seem an unsatisfactory material for this purpose, because it is likely to fracture under pressure. But beauty was doubtless considered before utility on some occasions, for two of the seals come from children's graves and one from that of a woman (graves 45, 59, 144). The fourth was found elsewhere, not in a burial.

METALS

The metals found in the graves cleared this season were gold, silver, and copper. No lead was found as last year. The probable sources from which these metals were obtained were dealt with in No. 1 of this volume, to which reference should be made. Special analyses are being made of the metals of some of the objects found this season, and the results will be published in due course.

MINERALS

The Sumerian of the time of the burials at "A" used but a small variety of minerals in the manufacture of his ornaments and seals, owing chiefly to the fact that he inhabited a practically stoneless country. Lapis lazuli and carnelian, however, were exceedingly common, and from these stones he fashioned most of his beads. Other varieties of stone were sparingly used for this purpose, including limestone, crystal, agate, onyx, red jasper, porphyry, etc. The stones used for his cylinder seals were serpentine, lapis lazuli, crystal, calcite, limestone, and breccia. These were either brought into the country as raw material, or were manufactured outside and imported in the way of trade. I am inclined to take the latter view for the following reasons:—(1) The curious diversity in finish of the stone beads fully discussed in No. 1 of this volume; it must be admitted, however, that cylinder seals made of lapis lazuli are invariably well made and in many cases highly polished. (2) The small number of the stone vessels found in the graves showing their comparative rarity at that period. Their scarcity is also proved by the fact that broken specimens were placed with the dead, as well as specimens that had been anciently broken and then ground down to make them serviceable once more. All this points to the conclusion that stone vessels were not manufactured in

Sumer, but were imported. Owing to the nature of the country, the Sumerians, when in Mesopotamia, were an agricultural and pastoral people, the frequent little wars among themselves preserving their ancient virility which was only overcome by hardier peoples from the hills, in some cases from the north and in others from the east. That the Sumerian was originally a hill man is the view of many authorities, and it was only when he was among the hills that he could obtain the necessary materials for stone-working. When he left the heights for the plains, however, he doubtless still kept up a connection with his ancient home, and still availed himself of its products, though the demand for them, as shown, for instance, by the decreasing use of stone vessels, gradually lessened as he became accustomed to his new environment.

TOYS

Although numbers of pottery toys, knuckle-bones, and draughtsmen lay about among the graves, obviously left there by children who used the cemetery as a playground, practically no playthings were found in the burials. Knuckle-bones occurred in two burials only (Nos. 97 and 136). In No. 97, which was a child's burial, a single bone lay close to and in front of the face, and in No. 136, which was an adult's, there were two bones close to one of the hands. These bones were those of a sheep or goat and were exactly similar to the knuckle-bones that are used in Iraq at the present day.

IVORY

This is a material which up to the present had rarely been found in Mesopotamia. The handle of a fine gold-mounted dagger found in burial 104 and illustrated in Plate XXXIX, Fig. 8, was carved in ivory. It is fully described in the following chapter. The ivory comb shown in Plate LIX, Fig. 6, was found at a depth of 2 m below the surface of the ground at "A," and evidently belongs to the burial period (Reg. No. 2730; Field). The source from which the Sumerians obtained ivory was probably India, although it must be taken into account that the elephant is spoken of as having existed in Syria in historical times.²⁷

SHELL

Shell is fairly well represented in the graves. As before mentioned, cockle and oyster shells were used to hold cosmetics. Shells of this order (Triton) were apparently used as beakers, as described below. Shell matrix was also used, but very sparingly, to make pendants for necklaces, some of which are shown in Plates XLII, Fig. 16, and LX, Figs. 8, 11 and 13. Thin slips were cut into animal forms and perforated to be threaded in a string. The same substance was also used for other purposes, for instance, for buttons and medallions (Plate LX, Figs. 6-7), for spindle-whorls (Plate LIX, Fig. No. 18), and for beads. Shell beads are rare, on the whole; they are fully dealt with in the chapter on Personal Ornaments. The use of shells for cylinder seals was, however, very common.

UNUSUAL OBJECTS

In seven burials (43, 75, 88, 90, 104, 120, 128) were found cups made by slicing off the top of an ostrich shell, leaving about three quarters for use. The cutting seems to have been done in every case by carefully chipping the shell all the way round. A shell cup found in burial 90 had a pottery neck and rim, overlaid with bitumen, in which pieces of shell inlay were embedded. Unfortunately, this was in such a broken condition that it can neither be photographed nor drawn until it is repaired (Reg. No. 2274; Field).²⁸ The same applies to the plain shell cups, all of which were found in small pieces. In three instances, these shell cups were found at the back of the head; in one case, close to and behind the pelvis; in another, close to the feet; and in two graves, the position of the cup with regard to the body could not be ascertained. These shells doubtless came from the Arabian desert, where the ostrich still exists.

The ornamented neck and rims of the shell cup found in burial 90 is similar in technique to two similarly ornamented pottery cups found in burials 88 and 90 (Plate XXXVIII, Fig. 1). Both these cups belong to type O pottery, and are coated inside and outside with a thick bitumen plaster, into which have been inserted, as an ornamentation, pieces of shell cut from the mussel that is still common in the Euphrates (*Anodonra*).²⁹ The sides of each cup are plainly ornamented with four leaflike pieces of shell placed vertically. The outside of each cup, though coated with bitumen, is unornamented. Both these cups were found close to, slightly above, the heads of the burials. The one shown on the left measures 57 mm in height by 100 mm in diameter at the rim (Reg. Nos. 2273 and 2256; Oxford and Field).

In burial 142, close to and behind the head, the interesting shell beaker illustrated in Plate XXXVIII, Fig. 3, was found. The shell measures 175 mm in length; the columella and a portion of its wall have been cut away so as to form a cup. Near the apex, two circles have been lightly incised presumably to represent eyes which are framed on three sides by a border of three parallel lines set close together. Inside the shell there are still traces of a black pigment resembling kohl. This species of shell may have come from the Persian Gulf, where it is still common (Reg. No. 2829; Oxford).³⁰

SUMMARY

Even from the comparatively small number of graves found in the palace mound it is possible to gauge, more or less, the characteristics of the people who were buried there. The Sumerian of the middle and lower classes was of medium stature, with a tendency to dolichocephaly, as shown by the skulls and bones found in the graves. That he was accustomed to hard foods, such as grain, is proved by the worn nature of the teeth in some of the skulls. Men as well as women wore long hair, as shown by the numerous examples of copper hair-pins found in the graves of both sexes. The unusually large size of many of these pins indicates that the hair was plentiful and thick. Men as well as women wore silver and copper ear-rings—as a rule, one on each ear—as well as beads of some-

what crude design threaded in one or more strings. A strong belief in an after life is implied by the large quantity of pottery and other objects buried with the dead, but the fact that this belief was in some respects rather vague is shown by the lack of any fixed orientation of the body and head. Both sexes were accustomed to use kohl for the eyes, and the use of cosmetics was general among men, women and even children. That the women as well as the men were continually engaged in agriculture seems to be proved by the presence of foot rubbers in their graves. Evidently, both men and women were unaccustomed to sandals, and required some aid to remove hard skin from the feet.

The men carried weapons, such as daggers and battle axes. It is obvious that, as at the present day in Mesopotamia, life was not always serene and that constant watchfulness was necessary, the principal danger being, as now, raids from adjoining tribes or from the powerful city states in the south. That linen clothing was worn is proved by samples found in the graves, but only where it had come into contact with copper, and was preserved by the oxidation of the latter (graves 51 and 57). From the seals it is apparent that the garment worn by the men took the form of a simple kilt, the better classes being clothed above the waist in a kind of shawl that was carried over the left shoulder and under the right arm. Women are not portrayed on the seals, but silver medallions found in the graves show that they were clothed from the neck, the medallion serving to decorate the garment at the breast, and perhaps also to fasten it.

It was probably the work of the women also to prepare the yarn for the weaver. Spindles and spindle-whorls have been found in one female burial this season and in another last year. In these two cases, the articles, which were made of copper, were preserved intact, but whorls, whose spindles were of wood and consequently had decayed, were also common in the mound. Linen and wool were the only materials that were spun, and clothing made from the latter was probably confined to outer garments. There is also evidence from one grave that ornamental leather work was known. A dagger-sheath of leather has left its imprint on a blade in the form of an elaborate border enclosing a fine design in diaper tool work. The sheath itself disappeared long ago, but its pattern has been preserved owing to the oxidation of the metal. Leather work is to be expected among a people engaged in agriculture and pastoral pursuits, but it is exceptionally fortunate to obtain this glimpse of the sort of work that they produced (Plate LXII, Fig. 19).

Many of the men as well as the women were accustomed to wearing a silver or copper fillet around the forehead. Two definite examples of a nose ornament have been found in adult graves (burials 63 and 128; Plate LIX, Fig. 28), and two studs of silver found in a child's grave prove that this form of ornament was also worn by children (burial 100; Plate LIX, Fig. 24). Men and women carried toilet sets in a small copper case, such as are still carried on a string around the neck by men in northern India. The case contained various implements including tweezers, ear-picks, pricklers, and sometimes a small blade. In the graves of the "A" cemetery, the usual place for these toilet sets was near the pelvis, showing that

they had been carried around the waist. In two graves, however, they would seem to have been worn on a string around the neck as in India. The presence of these toilet articles which are always associated with other objects of the better class suggests the cultivation of personal cleanliness.

The opinion that the Sumerian of the period of these graves was not unduly superstitious is upheld by the lack of amulets buried with the dead. Where found they are in most cases in child burial, and they were perhaps worn in order to endow the child with special virtues, rather than to protect it from malignant forces. The large carnelian beads, however, may have been worn as a charm; this was the case in ancient Egypt.

GRAVES OF A LATE PERIOD

To avoid confusion, the four graves which were of a later date than the rest of the burials will be described in full below, rather than included (as they are by number) among the Sumerian burials. Their positions are shown in the skeleton plan of the palace, marked in the same way as the early graves.

- Burial 41. Head to N. W., placed vertically so as to look towards the S. E. Body on back with arms crossed over the chest. The legs were straight. There were no objects associated with this burial. Sex male. Date(?).
- Burial 44. Head to E. N. E., on the left side facing toward the east. The body lay on its back with legs outstretched, humeri along the sides, and forearms crossed over the pelvis. An iron bracelet was found on the left wrist. A brick of the Nebuchadnezzar period was lying close to the head, and a number of pottery sherds were placed above the body. Sex, male. Date: Neo-Babylonian.
- Burial 111. Body lying E. N. E. to W. S. W., with head to E. N. E., in a pottery coffin measuring 149 cm in length, 51 cm broad at the head, and 37 cm broad at base, the depth being 18.50 centimetres. The coffin is flat-bottomed with rounded end, and is covered with a shallow lid rounded on the top. The body was fully extended in the coffin, and lying on its right side. No objects were found with it, though the grave was undisturbed. Sex unknown. Date: probably Greek.
- Burial 114. The body lay in a coffin of coarse baked clay 86 cm long, 50 cm wide, 54 cm inside depth. On the outside of the coffin, 28 cm from the top, there was a notched band. The coffin was orientated N.-S., and the body lay on its right side with the head to the north. Considerable pressure must have been exerted to get it into the coffin. The bones, apparently those of a female, were in a bad state of preservation. Outside the coffin on the north was a shallow bronze dish with a small raised boss in the centre (Reg. No. 2487; Baghdad). There was a string of beads on the body (Reg. Nos. 2498, 2499; Field), and a bronze ring, together with the human-like object shown in the upper left-hand corner of Plate XLII, Fig. 16 (Reg. No. 2499B; Field). The beads (some of the shapes are illustrated together with the ring in Figs. 19-20 in Plate LIX) are made of amethyst, green feldspar, onyx, carnelian, agate, breccia, jasper, lapis lazuli, crystal, and glaze, and include also an uninscribed seal. Date: Neo-Babylonian or even later.

POTTERY

This chapter deals with the pottery found in the graves excavated this season, but reference should be made to the account given in No. 1 of this volume of the series of pottery discovered last season (1923-24). The system of denoting types by letters is again employed for convenience of reference. Entirely new types have been found and added to the list, while old types have in some cases been subdivided. For example, type K in Plate LIII will be found to be subdivided into two groups—those with circular rims and those with a spout on one side. The latter group is designated type KA, the first letter showing the group to which it belongs, and the second that it is a variation from the normal type. Each piece of pottery bears a second number. This is the number of the card on which it was registered. Every group of pottery as it was taken from the grave was immediately recorded on a card, and each particular piece of pottery in the group distinguished by placing a letter after its registration number. Each was fully described on the card against its letter. This system makes for convenience of reference, as all the pottery of a particular group is recorded on the same card.

Out of the total number of 112 Sumerian graves cleared this season, eight contained no pottery, although other articles found in them proved that they belonged to the Sumerian period (burials 48, 50, 59, 85, 100, 107, 130, 145). Three of these burials (48, 59, 100) were those of small children, while the rest belonged to adults of both sexes. As a general rule, from six to eight jars were found in a grave, most of them of ordinary shape and form. The largest number of types found in a single grave was twelve. This burial (87), which was that of a male, also contained a number of other interesting objects. In each of the burials 136 and 147 there were nine types of pottery, some of which are quite unusual. Little regard can, however, be paid to the number of pottery types found in a grave. A large proportion of the burials had been disturbed anciently, and may originally have contained more types than those actually found in them. From burial 106 were collected twenty-one jars of eight different types, despite the fact that the burial had been disturbed.

As in the burials cleared last season, the most common jar is type C. One or more specimens of this were found in every grave. Next in order of frequency are types A and B, followed by type K. The rarest types are D, N, P, Q and R. It should be noted that not a single example of the heavy pans shown as type G in Plate LII was found in any of the graves, although there were numerous examples in the mound itself. As mentioned in the last chapter, this pottery evidently belonged to houses which had existed on mound "A" at the date of, or before, the cemetery. This pottery was probably exclusively reserved for kitchen use.

The pottery buried with the dead was almost always wheel-made, with a few exceptions, such as type J (Plate LII), which was doubtless made for special purposes and valued accordingly. It is still impossible to state that any particular

position was allotted to any one type of pottery, except that in general a small dish or jar, of types K, KA, and O, was found in front of the face, in some cases between the hands, as if held by them. Types A and B were as a rule close to and behind the head. In three burials (51, 52, 88), as before mentioned, braziers were used as a pillow, in another burial (69) a handled jar served this purpose, and in two, other types of jar were used as pillows (type E in grave 125, type C in grave 135).

All the pottery, with the exception of some of the simpler forms, like type K and O, is well made and baked, and the workmanship is creditable. The clay which was used contains very little foreign matter, and is well kneaded, fresh fractures showing a surprising absence of porosity. The baking is just sufficient and not overdone, the resulting color being a light red. Some of the pottery is thinly coated with a slip, but in general, the surface is left untouched. A handled jar from burial 52 was found to be thinly coated with a slip, though this finish is associated more with type C than with any other type. Most of the pottery is thick for its size, and not a single specimen was found in the graves or outside them of the ultra-thin pottery associated with very early sites. Decoration is confined to the handled jars and braziers, also to special pieces of pottery to be described below. Not a single painted jar, or fragment of one, was found, showing that at that period this method of ornamenting pottery was no longer employed. Painted pottery was found, however, in plenty at a site about 15 miles northeast of Kish, which is of an earlier date than the "A" cemetery.

A new variety of type C was found in graves 77, 95, and 120 (Plate LI, Figs. 12, 14, and 16). These jars are made of a thick grayish-black ware whose surface has been rubbed smooth with a pebble or piece of bone. The paste of which these jars are made is very compact, and shows little fissuring. This could hardly have been the case, if the coloring matter mixed with the clay had been such as would easily carbonize in the baking of the vessel. The color of this ware seems to have been produced by mixing with the clay a coloring matter which even the baking process left unchanged. Various forms of carbon could be used for this purpose, though it would have to be in small enough quantities not to destroy the coherence of the clay. This necessity probably accounts for this kind of pottery never being a true black, but an ashy-gray color.

Curious and difficult of explanation is the fact that in this polished pottery the neck and rim are always left unpolished, which suggests that the intention of the polishing was to render the jar waterproof rather than to ornament it. The polished surface of this kind of ware forms a skin which, owing to the amount of salt with which the jars are now impregnated, is easily detachable. It is about half a mm thick. A special slip was used, though there is no difference of color between this slip and the paste forming the body of the ware.

A simple bowl in burial 74, with rounded base (compare No. 11 in Plate LII) and four similar bowls found in various parts of the mound, but not associated with any other objects, were made of this dark ashy-gray paste and polished inside and out. The surface formed was smooth, but shows a slight amount of undulation which is due to the make of the dish. It is perhaps best described as

semi-polished. But the ware is always thick and clumsy. They were probably used for food, and the object of polishing was to facilitate the proper cleaning of the bowl after use. A fragment of a round-based bowl similar to Fig. 46 in Plate LII of the same dark polished ware was picked up on the surface of the mound. I would provisionally date this dark polished ware to the latter end of the grave period, owing to the fact that the jars of type C, which were so treated, are decadent in form. But more examples must be found before this suggestion may be finally accepted. The small jars of type N, illustrated in Plate LIV, fall into another category. Though they are made of the same kind of clay as the rest of the pottery, they are differentiated by the semi-polished red slip with which they are covered. This slip has been carefully rubbed over with a bone (?) implement, whose marks appear as broad lines.

An unusual type of pottery found in the "A" mound is illustrated in Plate XLV, Figs. 3-4. No ware of this kind has yet been found in the graves, though there is reason to think from the levels at which these objects were found that they belong to the period of the graves. This pottery is fully described in the last chapter. I am inclined to think that the three hemispherical moulds—for moulds they must surely be—were used to model paste of fine texture, which was subsequently glazed. All three examples are too thin to mould ordinary clay, but they could be used effectually with gypsum plaster or in some similar material without risk of breakage.³¹

The people living at the period of the "A" cemetery evidently realized the advantages of the ring base for pottery; it appears in most of the types, especially in the larger jars. Most of the very early pottery of the Sumerians has round or pointed bases, which were suitable enough in a sandy country. Such primitive jars are, however, useless on hard soil owing to their liability to upset, and rings of plaited grass or something similar were probably found to give the necessary support. It was only a short step from this to make pottery stands of clay, which were eventually attached permanently to the rounded bases of the jars when they came off the wheel. In some cases, the bases of the jars did not adhere properly, possibly owing to different degrees in the plasticity of the clay, the jar being allowed to dry too much before the ring was added. The result is that the ring base often became separated from the rest of the jar.

It is noteworthy that pottery of practically all the types found in clearing the burials is better finished at the neck and shoulder than at the base. Indeed, all the larger jars are made in two or more parts, which were put together while still damp. Especial care seems to have been taken in fashioning the upper part, including the rim, neck and shoulder.

I should like to see in much of this pottery, especially in types A and C, a survival of leather and basket work. The beaded rims certainly suggest two edges stitched together, and the notching may represent the overcasting of the cord or thread. The turned-down rims found in a considerable portion of the pottery can also be associated with basket work and with metal work as well. The decoration always present on the shoulders of the handled jars is certainly derived from basket work.

It is significant that the spouted vessel (type D)—only six examples of which were found in the actual burials (81, 87, 96, 149) this year and two during the season 1923-24—no longer occupies a prominent position in Sumerian pottery. If it had been much in use at the period of the "A" cemetery, more examples would surely have been found in the burials, though the types shown (Plate LI, Figs. 18 and 20) must all have been thrown or washed out of graves. Only one example was found of a spout in graves dated to the first dynasty of Babylon, nor do spouts occur in any vessels in the numerous graves of Neo-Babylonian date, which have been lately excavated at Kish. The date of the re-appearance of spouted vessels in Mesopotamia is open to conjecture. They are now in common use among the Arab tribes, and seem to have been re-introduced from the north or from Syria, which country originally borrowed the idea of the spout from the Sumerians. The earlier type of spouted vessel seems to have had a globular body. Such a one was found below the footing of the palace, and is of the same date or even earlier. Globular jars with spouts are also associated with the painted pottery which has been found on a site about fifteen miles N. E. of Kish.

HANDLED JARS TYPE A Plates XLVIII-XLIX

As was the case in the previous season, a handled jar was found in nearly every grave, the only exceptions being burials that are poor in other respects also. No less than three specimens were found in burial 40, and two in each of burials 47, 97, and 154. Where more than one example of these jars were found in the same grave, it is probable that the grave had more than one occupant. There are no actual indications of this, but the bones of very small children disappear in certain soil. Kish still remains the only place in which this type of pottery is known to have been used. It was not found at Asshur, though a small number of its companion type, the brazier, was unearthed there. Banks found many objects of the same kind as occur in our burials at Bismya, but he records no occurrence of the handled jar at that site.

After working over the numerous tablets found in mound "W," S. Langdon reports that the ancient temple of Harsagkalamma is definitely fixed as lying hidden beneath the mounds at Ingharra. In all probability, therefore, the female figure on the handle of type A jars represents the mother-goddess Aruru. The most important of the handled jars found this season are illustrated in Plates XLVIII and XLIX, and some of their handles in Plate XLV. Where a jar is not considered of sufficient interest to be drawn in full, but was decorated with an interesting pattern, the pattern alone is reproduced.

Two variations of type A, which have the spreading base characteristic of type E, have been found this season. They are illustrated in Plate XLVIII, Figs. 1-2. Apart from these two jars, it will be seen that the handled pottery found this season conforms in shape and technique to that described in No. 1 of this volume. The decoration is, as before, confined to the neck and shoulder of the jar. Three exceptions have, however, been found this season. On a jar from burial 79, a zig-zag line resting upon a base line runs around the vessel at a con-

siderable distance below the notched beading at the shoulder (Plates XLVIII, Fig. 6 and XLIX, Fig. 2). In burials 90 and 121, a zig-zag line alone encircles the body of the jar immediately below the shoulder. It seems to have been an invariable rule that this type of pottery should be decorated, the only exception being the example from burial 120 in Plate XLIX, Fig. 1. The small jar shown in Plate XLVIII, Fig. 18, is also undecorated, but its size and roughness of make prove it to be the work of a child. The decoration was done with a comb in some cases, and in others with a single point. I have not been able to determine whether the one method is earlier than the other or not; they appear to be contemporaneous, as are also jars which are carefully decorated and jars which are not.

On these jars which have either no beading or a very rough one, at the junction of shoulder and body, the decoration is usually done with a single point. These vessels are of a degraded type, in form as well as in decoration, and may well belong to the latter end of the period of the graves. Examples are shown in Plate XLVIII, Figs. 3-5, 7-10, 17, and 21, all of which were actually found in burials, except Fig. 7, which was found with Fig. 4 in Plate XLIX at a level of 2 m below the surface of the mound. The latter, however, certainly cannot be regarded as a degraded type, either in decoration or form. Moreover, its design was made with a comb.³² The zig-zag line, or rows of chevrons, bounded by a line above or below them or both, is the most common motif of decoration. If the triangles thus formed are hatched in, they are always represented with their apices upward, except when a double row of triangles appears; then the upper rows always have their apices downward. In no case is the design so carefully done as to permit of the apices of triangles meeting exactly to form a simple definite design.

In the better finished jars, great attention was paid to pricking all round the junction of neck and shoulder—a feature not found in the jars with cup-bases or lacking definite beading at the shoulders. The punctures are usually small and roughly made, as in Figs. 6, 15, 20, 22-24 of Plate XLVIII and Figs. 2, 3, 6 of Plate XLIX. In rarer cases they are rough vertical or oblique scratches as in Figs. 11 and 12 of Plate XLVIII; these are sometimes arranged chevron-fashion, as shown in Figs. 16 and 21 of the same plate.³³ In three jars, the lower part of the neck is ornamented with rough scratches, as in Plate XLVIII, Figs. 23-24; in Fig. 9 there is a definite design, and a single combed band in Fig. 14. The combs used in the design seem to have had an average number of four teeth.³⁴ It is possible, however, that the tool used was so held that more or less teeth could be used at will to make the impressions required. No particular care was employed in the use of the comb to ensure regularity of the lines, with the result that they frequently overlap and combine with one another.³⁵

The projecting beading at the junction of the body and shoulder of jars of this type is described and discussed in No. 1 of this volume. In only one case was this left untouched (Plate XLIX, Fig. 3). The jar shown in Plate XLIX, Fig. 1, is unique on account of its flat base and total lack of decoration. Some new varieties of handles have been found this season; they are shown in Plate XLV, Figs. 6-9, 11-13. The handles, of which examples are shown as Fig. 9 in this plate and Nos.

15 and 22 in Plate XLVIII, are very curious. They are obviously a degradation of the ordinary figured handles, though the jars to which three of them belonged show no signs of degeneration in type. Six examples of such handles were found, four coming from burials 40, 91, 94, and 96 and two from the debris of the mound. The latter had become separated from the vessels to which they belonged.

The handles of the jars from burials 40 and 91 are thick, rectangular pieces of clay with no ornamentation or features (Plate XLVIII, Fig. 4). Those of the jars in burials 94 and 96 are broad and flat, and extend only half way up to the rim (Plate XLVIII, Figs. 15, 22). In the latter, the face of the handle is ornamented with a six-armed cross, each arm being made up of two lines; the top of the handle is in the shape of a double bow. Of the remaining two handles, one is decorated similarly to the handle in Fig. 22, but with single lines instead of double (Plate XLV, Fig. 9); the other has a more elaborate pattern consisting of a central vertical line with simple V-shaped markings on either side. An exactly similar handle to the first of these two was found on the summit of Tell Ahaimir between two bricks, whither it must have been brought in the mud used as mortar. The bases of some of the handles in Plate XLV, Fig. 13, show the way in which they were attached to the jars. From the care with which these handles were secured (the method is discussed in No. 1 of this volume) it is certain that they were used to lift the vessels, despite the fact that the upper ends do not adhere to the rim of the vessel.

The same method of fastening was employed for the flat type of handle as for the hollow ones. The latter, a specimen of which is shown in Plate XLV, Fig. 8, of course required a larger hole; that there was some difficulty in fixing them in position is suggested by the comparatively small number found. The hollow handles communicate at their bases with the interiors of the jars. Jars with hollow handles were found in burials 52-55, 61, 75, 79, 90, 101, 104, 109, 110, 121, 122, 144, and 150. I am inclined to see in these handles evidence that they are survivals of the spout with the mouth pinched flat to close it. If this be so, the hollow-handled type of jar should be earlier than the jar with a flat handle. If this be correct, the spout would be the origin of the handle of whatever sort in Babylonia; though how much handles were used, and what were their shapes in the period succeeding the burials, are questions which still await archaeological investigation. The exceptional strength of the handles, the way in which they are secured, and the durability of the jars to which they belong suggest that they were not used for ordinary purposes. It is obvious that these jars with their small necks were intended to hold water, and I would suggest that they were employed to carry sacred water for ablutions, either from the temple to the home or from the sacred river (Euphrates). The figure of the goddess on the handle surely points to these vessels having a sacred use. If this surmise be correct, the fact that one is found in practically every grave is not surprising, and the apparently local nature of these jars is also explained.

Two most interesting handles are shown in Plate XLV, Figs. 11 and 12—the first from burial 53 and the second from burial 93. In both these examples (and

it occurs in no others) the mouth is shown as well as the other usual features. A breast is missing in each case. The presence of the modelled eye-sockets in Fig. 11 is very unusual, and it is noteworthy that they show no tendency to the obliqueness present in the Mongolian races (Reg. No. 1912; Oxford. Reg. No. 2320D; Field). An attempt at modelling is also shown in a handle from burial 136, where the pupil of the eye is indicated by a small pellet of clay surrounded by a narrow circular strip of the same material.

The tree-like pattern down the centre of the breast in Fig. 11 (perhaps the representation of a palm-branch) is also to be found on the handles of the jars from burials 63, 117, and 147, as illustrated in Fig. 13, handle 6, of the same plate. This motif is also found on a jar handle from burial 87, where it is placed on either side of the handle, on the right with the leaves growing upward, with the leaves downward on the left. The same design too occurs on the shoulders of some of the jars, immediately to the right of the handles of vessels from graves 69, 82, and 142. On a handled jar from burial 154, three trees alternate with hatched triangles and chevrons in the decoration of the shoulder. It should be observed that this tree or palm-branch design is practically identical with that on the pottery dish and moulds illustrated in Plate XLV, Figs. 3 and 4, which is one of the reasons for concluding that the latter belong to the same period as the graves (see last chapter).

A common feature in the decoration of the handles is a pair of oblique lines, which start from the breasts or from the top of the handle and cross each other in the middle, as in Figs. 7 and 13 of Plate XLV. This occurs so frequently that it must have had some significance, though what it was is difficult to say. On the handle of the jar from burial 105, each of these lines is doubled, and triple lines appear on another from burial 117. In general the handles of these jars closely resemble those found and described in the preceding season. A few additional points of interest have, however, come to light. In those cases where brows are represented by the addition of strips of clay above the nose, they are always very pronounced and suggest rather prominent supra-orbital ridges, which are a noticeable feature in some of the skulls recovered from the graves. The brows in Fig. 12 are unique, inasmuch as lines which are parted in the middle are incised upon them to represent hair. The nose is always prominent on handles where features are represented at all; in no case has it ever been found portrayed by lines or incisions. The breasts also are always very noticeable. Only in three handles are they lacking, and it is noteworthy that in each case the handle is carelessly made and finished (burials 87, 123, 147).

Ears occur on the handles of ten jars in all (burials 43, 61, 78, 90, 101, 104, 110, 126, 138, and 144) made by pulling out the top corners of the handles slightly. Sometimes they bear circular markings incised with the ends of a small tube which from its evident thinness must have been made of metal. Where these marks are present, the eyes and breasts also have the pupils and nipples indicated in a manner similar to Fig. 8 in Plate XLV (in burials 61, 75, 79, 104, and 131). The hair is indicated on the handles from burials 63 and 69 by a series of

notchings down either edge in the former case, and in the latter, by four vertical lines on either side of the nose. A dress seems to be suggested in three handles from burials 61, 93, and 145. In the first two, there are a number of oblique lines below the breasts (Plate XLV, Fig. 12), and in the last, a number of vertical markings. It is open to question, however, whether these are not rough representations of the *mons Veneris*, which is again a quite common feature on the handles or bodies of the jars, examples of which are shown in Figs. 6 and 11 of the same plate. If represented on the handle, the triangle is drawn apex upward; if on the body, apex downward. These triangles are generally hatched to represent the hair (at base of handle in burials 52, 65, 67, 70, 138, and 148; body of jar in burials 53, 61, 75, 90, 109, 121, and 150).

Necklaces are also common, and examples may be seen in Figs. 7-8, 12-13 of Plate XLV. They are always roughly drawn, either as a simple line or in a series of scratches intended to represent beads and pendants. Sometimes more than one string is shown, and in rare cases beads are represented by incised circles as in Fig. 8 and in handle 4 of Fig. 13 of Plate XLV (burials 49, 61, 75, 93, 104, 144).

BRAZIERS TYPE B Plates XLIX and L

As was shown by last season's work, it was evidently customary at the period of the "A" cemetery to place a brazier with the handled jar in every burial. Where more than one was found in a burial, as in graves 40, 51, 97, and 120, the second brazier was probably intended for a child whose bones have disappeared. The surmise that these utensils were used for burning a fuel like charcoal or for incense receives strong support from this season's work, though the brazier was more probably used for heating than for any ceremonial purpose. If braziers had been used only in the temples, one would hardly expect to find an example in nearly every grave, as we do, but that they were used in temples as well as in dwelling houses is of course quite probable. It has been suggested to me that braziers would hardly have been required in a warm country like Mesopotamia. But that the winters there were extremely cold has been proved by the winter of 1924-25, during which we experienced seven weeks of frost, the temperature on several occasions falling to thirteen degrees below freezing point.

The brazier was obviously placed in the grave to provide the occupant with a means of warming himself in the next world. That it was not first used for any funeral ceremony seems to be proved by the fact that in more than one case the brazier was used as a pillow (burials 52, 51, and 88). The absence of any trace of charcoal or indeed any sign of burning points to the possibility of these objects having been made especially for funeral equipment. A number of fresh points of interest emerge from this season's work. In the brazier illustrated in Plate XLIX, Fig. 7, the ventilation holes take the form of slits. Fig. 13 of the same plate, the upper part of which is missing, has a long slit on either side of the stem, with a semicircular aperture above it, the latter made by dividing the original slit into two by a narrow band of clay. There is proof that the stems of these braziers were in some cases ornamented. One found last season was roughly scratched all

over, either for decoration or to roughen the surface so as to provide a better hold. Ornamentation, however, went further than this, for in Plate XLV, Fig. 10, a portion of a stem is shown decorated with figures of antelopes. This stem is divided by three vertical slits into three parts, upon each of which an antelope is represented standing in front of a palm-tree. In the photograph, the unbroken edges on either side and broken edges above and below are quite clear. The other two portions were found, but as the design is identical in each case with the one photographed, it is unnecessary to reproduce them. The section illustrated measures 105 mm across, and was found with the other two portions about 80 cm below the surface of the mound (Reg. Nos. 1119, 1113 and 1120; Baghdad, Oxford, and Field, respectively).

Figs. 7-9, 11 and 14 of Plate XLIX represent small braziers which are severely plain in their design and unadorned, except in the case of Fig. 7, which has a wavy line made with a single point around the top of the rim. This line, which can be clearly seen in Figs. 10, 12, 16, 18, etc., owing to the curvature of their rims, is present in all the decorated braziers, and seems to be an integral part of their designs. In nearly every case these braziers belong to child burials. Figs. 9 and 11 were found with braziers 16 and 20 both of which are of the decorated variety. Each of the graves in which they were found contained the body of a female, and though no child's bones were found, they could easily have disappeared owing to the salt in the soil. Fig. 14 was found with other jars in a grave with no vestiges of bones left, and other small braziers not illustrated were found in burials 97, 102, 115, 120, 131, and 132, four of which were those of children. Fig. 15 is of a new type in that the joint between pan and stem, at which so many of the braziers were found to have been broken, is strengthened by three supports of clay arranged at regular intervals (Reg. No. 1815B; Oxford). Fig. 16 is unusual on account of the two roughly notched beadings around the base of its stem. The fine brazier illustrated in Fig. 18 is the largest that has been found at Kish. It is of coarse, light red ware and clumsy make, roughly decorated at the base with slanting lines crossing one another. Its chief feature, however, is the large number of ventilation holes in its stem, two on either side near the base and one on each side just below the pan. In Fig. 21, the pan is of unusual shape, deep and basin-like, with an insignificant, double-notched rim. It was found in a burial which had no traces of bones.

Fig. 1 of Plate L is well proportioned, though somewhat roughly made. The decoration of the base was done with a six-toothed comb, though for clearness of drawing the number of parallel lines so produced had to be reduced to three. Fig. 3 is most elaborately decorated with a five-toothed comb, and there is a deeply notched beading at both the top and base of the stem. In this brazier, the usual zig-zag line around the top of the rim is lacking. Fig. 4 is unusual in having two raised ridges around the base and another near the top of the stem, as in Plate XLIX, Fig. 18. Fig. 5 is also well equipped with ventilation holes, six in all. There is a well-finished beading, heavily notched all the way around the top of the base. Other decorations were done with a four-toothed comb. This is perhaps

for proportion and makes the finest brazier that has been found in the cemetery. Fig. 6 is coarsely made and of little interest, except that the rim of the pan is made up of three bands, which are divided into a series of lozenges by a number of almost vertical lines. This form of ornamentation is rare, and only this one example has been found this year. Three braziers with this type of rim were found last season (see No. 1 of this volume, Plate XII, Figs. 16, 18, and 29).

The double-rimmed variety of pan is almost universal, the upper and lower rims being slightly notched. The braziers found in burials 66 and 67, however, have only the upper edge of the rim thus treated. The decoration of these braziers was in some cases at least started on the wheel, which for this purpose was run slowly. The stem of the brazier from burial 71 is ornamented with a spiral line, made with a six-pronged instrument, which encircles it three times. In Plate L, Fig. 6, a spiral line made with a single point makes nearly four turns round the base of the stem. Illustrations of some of these braziers with other pottery found with them are shown in Plate XLIX, Figs. 7, 8, and 10. It should be observed, however, that the small brazier in the pottery group from burial 75 has been included in the photograph by mistake.

STRAIGHT-SHOULDERED WARE TYPE C Plate LI

This type of jar is the one most often found in the "A" cemetery, and in grave 77 there were no less than seven examples. A jar of this type was used as a pillow in burial 135. Two or more varieties appear in the same grave; for instance, the plain, rimmed specimens such as 2, 3, and 4 of Plate LI are found with jars whose rims are turned over as in Figs. 13 and 14, etc. A new variety of this jar has been found this season, the polished specimens of dark-gray ware discussed above. It is only necessary here to describe those jars which vary from the ordinary type. In Figs. 7, 8, 10, and 11, there is a conspicuous beading at the angle between the shoulder and body, where, as described in No. 1 of this volume, a join is made between two separately made parts of the jar. This beading, of which but few examples were found, is never notched or ornamented in any way. Fig. 10 is ornamented with two bands made with a five-toothed comb, and it is the only specimen thus adorned found this year, but four were found last season. Fig. 11 illustrates the most elaborate jar of this type that has yet been discovered in the cemetery. Its decoration recalls the designs found on the braziers and handled jars. The groups of lines were made with a six- and not three-toothed comb, as illustrated. This jar is exceptionally well made and thin for its size. Fig. 15 is a jar that might have been included in type E, if it were not for its base. The shoulder is ornamented with chevrons scratched roughly with a single point. The ring base was made by pinching the bottom of the jar outward all round, instead of adding a ring in the usual way. Fig. 17 shows a jar which is unique for this type, on account of the pricking at the junction of the neck and shoulder—a feature otherwise found only in the handled ware. The squatness of this jar and of Figs. 12, 14, and 16 should be noted. This apparent degeneration of form cannot, however, be used in dating this pottery, for the squat and more graceful specimens are found in the same graves.

SPOUTED JARS TYPE D Plate LI

During the season 1923-24 but few spouted jars were found in the "A" cemetery. Jars similar in shape to Figs. 19 and 22 of Plate LI occurred in only four burials (81, 87, 96, and 149); two specimens were found in each of the burials 87 and 96. Fig. 18 was found together with a jar of type C, which had a slightly polished surface, at a level of 91 cm below the surface. Fig. 19 evidently belonged to burial 81, but as this grave had been disturbed, the original position of the jar could not be ascertained. Fig. 20, which is of an unusual shape, was found 2.55 m below and close to the N. W. corner of the palace. This may belong to the period of our graves, but from the depth at which it was found (75 cm below the foundations of the palace) I would date it to the palace period or perhaps even earlier. The notching at the junction of shoulder and body is curious, and is perhaps a representation of the stitching in leather work. Fig. 21 is evidently a model spouted jar which from the roughness of its make seems to have been the work of a child. It probably belongs to the period of the burials, but is unlikely to have come from a grave. Fig. 22 was found in burial 96, where it was associated with another spouted jar. The specimen illustrated lay close to the left hand of the body, the other jar being placed just above the top of the head. A jar of type A whose handle lacked the usual feminine features was also found in this grave.

CUP-BASED POTTERY TYPE E Plate LII

This type of jar is fairly common in the burials. As a rule one specimen is found in each grave, but there were three in burial 40, and two specimens in each of burials 63, 88, and 123. One was used as a pillow in burial 125, as was the case in a burial (No. 21) cleared last season. This season we found a considerable variation in the position of this type of jar. They were placed behind the head, in front of the face, behind the pelvis, and in three graves close to the feet. Variations from the somewhat peculiar cup-shaped base from which the type derives its name occurred in the burials cleared last season. Fig. 1 is of the ordinary type and similar to those found last year. Figs. 2-3, buried in the same grave, are unusual on account of their globular form. In Figs. 4-5 the base is very shallow, and almost approaches a ring base in shape, especially in the case of Fig. 5. Fig. 7 is an exceptionally well-made jar of fine proportions, but Fig. 8 is hand-made and closely allied to Figs. 41-44 of type J, except that there are no holes for suspension. Its shoulder has been decorated with crisscross lines made by a fine point. The interesting jar (Fig. 9), which was found in a chamber on the summit of the mound, is fully described in the last chapter. It is clearly of the same type. Two other jars of this incised ware and also of type E are illustrated in Plate XIV, Figs. 6-7, in No. 1 of this volume; the striking similarity between Fig. 6 and the jar illustrated here should be noted. For the reason given last season I am still of the opinion that this ware, despite its infrequent occurrence, was made in Babylonia and not imported.

BOWLS TYPE F Plate LII

The simple bowls illustrated in the plate were not often included in burial equipment. Two were found in grave 43, and one each in graves 57, 95, 96, 118, and 136. They usually have a round or semi-rounded base, but a bowl with a flat base which shows signs of heavy scoring was found in grave 136 (Plate LII, Fig. 13). Fig. 16 also has a flat base, but it was not actually found in a grave. This ware is always light red in color, thick and heavy, which suggests that these bowls were used as food vessels or for cooking. The bases of Figs. 11, 15, and 17 are so made as to prevent their rolling beyond a certain distance.

PANS TYPE G Plate LII

No example of this type has been found in a grave, as mentioned above; but all the examples illustrated obviously belong to the grave period, for the reasons set forth in the preceding chapter. Fig. 19 is well made, though somewhat thick for its size, but Figs. 18 and 20 are hand-made, of very rough ware, and are thick and imperfectly baked. Fig. 21 is a deep bowl of very rough pottery. Its base is very concave on the outside, and has a very rough hole in the centre, so that it is difficult to understand what was the exact use of the utensil. Fig. 22 is hand-made, with thick sides and a very thin base. There are three small upward projections at equal intervals on its rim. Fig. 23 is a hand-made bowl of very rough workmanship, with six irregularly placed depressions in its base. Fig. 24 is a bowl of roughly-made pottery which has the remains of four projections inclined inward from the rim (Reg. No. 1918; Field). Fig. 25 (see also Plate XLIV No. 12, Fig. 1) shows a round dish of thick pottery with three curious handles, which are turned over inward and attached to the base of the vessel. Each handle is narrowed and flattened on the inside of the turn-over, and it is possible that they served as supports for some vessel placed upon them (Reg. No. 2000; Baghdad). Fig. 26 is also hand-made and poorly baked. In form it somewhat resembles Fig. 25, for it also has handles that turn inward; but in this case, the inner ends of the handles are attached to the rim of a circular compartment in the centre of the dish, instead of being continued right down to its floor. Three holes in the base of the partition wall allow for the circulation of air or fluids between the inner compartment and outer circle of the dish. Nothing quite like this extraordinary piece of pottery has been found elsewhere, and it is difficult to conceive the purpose for which it is made. I am inclined to think that it served the purpose of a stove, to boil water or cook food in a vessel resting on the three supports. The fuel would, of course, have been charcoal or dried dung. In the less elaborate forms (Figs. 22 and 24) the smaller projections of the rim served the same purpose as the larger supports in Figs. 25 and 26, thereby leaving a larger surface for the fuel.

BEAKERS TYPE H Plate LII

This type of pottery has been found more frequently this season. Twelve burials in all contained either one or two specimens each. As these beakers do not vary much in shape, only two illustrations are given (Figs. 27 and 28). They are

always wheel-made and exceptionally well-baked. No particular position was allotted to them in the burial (see Plate XLIV, Fig. 8, for a burial group in which they occur).

JARS WITH HOLES FOR SUSPENSION TYPE J Plate LII

This type of jar has occurred in so many varieties, that it has been found advisable to distinguish two sub-types by adding the letters A and B to the original type letter J. Jars of the original type were found in considerable numbers in the mound, though but few of them occurred in the burials. They are nearly always hand-made and of rough and ready workmanship. Fig. 36 is small and barrel-shaped with a rounded base, and at either side of the rim a rough lug is attached with two small vertical holes bored through to take a loop of cord. Fig. 40 is exceptional in being wheel-made. In the rim there are four vertical holes, two at either side, to take a cord. Fig. 45 is of red ware and hand-made, and the two holes at either side of the rim are bored in an oblique direction. The body of this jar is ornamented with three circular bands made with a four-toothed instrument. Fig. 46 is a simple round-based bowl of red ware. At either side of the rim there is a projection about 40 mm long, through which two holes are bored vertically.

CUCUMBER-SHAPED JARS TYPE JA Plate LII

Figs. 29, 30, and 31 are evidently models of some sort of vegetable, perhaps a cucumber or gourd. They are provided with holes for suspension, are hand-made and substantial for their size. They bear no indications of the nature of their original contents. Fig. 29 has a small hole on either side of its rim, but in Figs. 30 and 31 there is a lug pierced with one hole in the former and two in the latter case. None of these examples was actually found in the graves, but they evidently belong to that period (Reg. No. 2146A; Oxford. 2485; Field. 2074; Field).

DOUBLE-MOUTHED JARS TYPE JB Plate LII

This type of pottery is rare. Again none of them actually come from graves, though there is no doubt that they belong to that period. They are all hand-made and slightly oval in shape. The original mouth has been pinched together in the middle to form two apertures instead of one. A hole is bored through the flattened area between the two mouths to take a cord. A similar specimen, it will be recalled, was found last year (Reg. 2347C; Baghdad. 2601; Field. 2593; Oxford).

FLAT-BASED CUPS TYPE K Plate LIII

This type of jar is very frequently found in the burials, two or three specimens often occurring together. They are always wheel-made and show conspicuous grooving on the bases, proving that they were made on a slow wheel. Their usual situation in the graves was in front of the face; indeed, it sometimes appears as if the hand of the dead person were clasping one. In some cases they are so roughly made that they appear like hand work, despite the fact that the concentric grooves on the bases prove that they were made on the wheel.

LIPPED FLAT-BASED POTTERY TYPE KA Plate LIII

This pottery differs only from type K in having a portion of the rim pulled outward to form a lip. Jars of this type were very frequently found close to and in front of the face of the dead.

ROUND- AND POINTED-BASED POTTERY TYPE L Plate LIII

It will be seen from the numerous illustrations that this type of pottery shows a remarkable divergence of form. It is seldom decorated, but examples do occur, as shown by Figs. 29, 53, and 57. Fig. 29 was scored on the wheel with a single point, and the lines on Fig. 53 are also spiral, making fifteen turns around the shoulder of the jar. Fig. 57 was scored at intervals with a six-toothed comb, though for clearness' sake a smaller number of scratches is shown. It is thickly made. Most unfortunately the neck was missing, for the shape is otherwise quite new. No especial place in the burials was reserved to this type of pottery. It is always wheel-made, and the base is not so well finished as the upper portion of the jar. It would seem that after the neck and shoulder of the jar were finished, it was reversed on the wheel in order to complete the rounded base; or it is not impossible that the base was made first and that the lump of clay was then placed on a ring-stand for the upper portion to be completed.

CUPS WITH HOLED BASES TYPE M Plate LIV

This variety of jar is rare. Two examples were found in each of burials 43, 87, and 152, and three in burial 106. The distinguishing feature of the type is the presence of a small hole, which was bored with a stick at the edge of the rounded base. In two examples, however, this hole is in the centre of the base. These jars were perhaps used as strainers of some kind; but holes, which average 9 mm in diameter, would allow fairly large bodies to pass through unless some filtering material were used. With a piece of linen over the hole, these utensils may have served to run off the whey from sour milk. They were found in various parts of a grave, though the specimen in burial 87 was given the place of honor, in front of the face. Fig. 6 is unusually large for this type of jar. It was found with Fig. 1 and a group of other pottery behind the head of a burial. Out of eight graves which contained this type of jar, four were female burials, three were male burials, and one was that of a child. There is therefore no reason to think that this type of jar was used by any one sex. The clay of which these vessels are made resembles that of the other pottery, and all are of a light red color.

NARROW-MOUTHED POTTERY TYPE N Plate LIV

This is an uncommon type of jar which occurred in two graves this season (136 and 148). In the former it was found with other pottery near the feet, and in the latter, as no bones remained, its position with relation to the body is not known. The ware is peculiar in that the paste of which all the examples were made is dark red in color and very close in texture, with a total absence of the fine

fissures present in all other pottery. The surface is in every case well preserved, showing a slight polish, which from the lines upon it must have been done either with a pebble or a large piece of rounded bone. Some of the jars are covered with a red haematite slip in addition to being polished. The type is an interesting one, both for general shape and for the unusually narrow mouth.

SIMPLE DISHES TYPE O Plate LIV

These dishes are very common in the "A" cemetery, the number in each grave ranging from one to four. As examples were found in even the poorest graves, which shows that they were used by rich and poor alike, it is likely that they served as drinking cups. A dish of this type is often found lying with a jar of type K close to the hands and in front of the face of the dead, but it also occurs in other parts of the grave, as, for instance, near the feet. This ware is always wheel-made, though very roughly finished, and the base invariably shows very heavy concentric scoring.

RIBBED POTTERY TYPE P Plate LIV

No examples of this kind of ware were found in the graves cleared in the season 1923-24, but fortunately four examples were obtained this season from graves 62, 87, and 106, of which the last contained two. The remaining specimens illustrated come from the debris of the mound, and were probably washed or thrown out of the burials. The jar that was found in grave 87 is also illustrated as 3 in Fig. 11 of Plate XLIV. The position in which this type of pottery was placed could be ascertained only in this burial (87), where it lay near the feet. It will be observed that pottery of this type was made with either a flat, a round, or a ring base. In Fig. 24 a small hole was made with a stick before the jar was baked, and in this feature the jar resembles type M. An exactly similar specimen of ribbed ware with a round base was found at Fara.⁸⁶

POTTERY TYPE Q Plates XLIV and LIV

It is difficult to give a name to this very extraordinary type of pottery, examples of which were unknown until two specimens each were found in graves 87, 106, and 147. Three of these jars are shown in Plate LIV, Figs. 29-31, and two in Plate XLIV, Figs. 11 and 8 (Reg. Nos. 2242E; Field. 2242Q; Oxford. 2702F; Oxford. 2754A; Baghdad). Jars of this type are of flower-pot shape, but with a heavy ring base, and in each a portion of the base has been pulled outward to form a lip, so that when the jar is inverted, its base forms a very shallow cup with a spout. In one of the specimens from grave 87, the ring has been slightly dented inward in two places, as if something had been rested on it before the jar was baked. This can be clearly seen in jar 8 of Plate XLIV, Fig. 11. All this ware is thick, heavy, and wheel-made. The baking is fair, and the color light red. It is quite evident that this type of pottery was used with the apparent base upward, but what that purpose was is difficult to decide. As two specimens were found in each of the three graves in which they occurred, they were perhaps used in pairs.

The position in which these jars were found in the graves does not help to explain their purpose, for two in one grave were placed close to and in front of the knees of the dead, and in another grave they were placed in a group of pottery behind the body.

PERFORATED DISHES TYPE R Plate LIV

Perforated dishes or strainers were found in burials 87, 88, 102, and 106, two of which are illustrated in Figs. 34 and 36 of the plate. Fig. 34 is of fairly thick pottery of a pale yellow color. In the round base there are six small holes, two alone of which could be shown in the section drawing. Fig. 36, though of thick ware, is well made and provided with a number of small holes that extend more than half way up the vessel. This was found placed, for safety, in one of the larger pieces of pottery in burial 88 (Reg. Nos. 2242H; Field. 2252L; Oxford). The example from burial 102 is dish-shaped, and the small holes are confined to the area within the ring base (Reg. No. 2423). The strainer from grave 106 has a small flat base with a number of regularly placed holes which average 3 mm in diameter (Reg. No. 2391T; Oxford). The small strainer (Fig. 33) somewhat resembles the rose on a modern hose-pipe. It is bottle-shaped in form, with a large hole in the base and a series of very small holes irregularly placed around the sides. Unfortunately, the neck of the vessel is missing, but judging from what remains it must have been very small. The article is thick for its size, well made, and the clay of which it is composed is light red in color. It was found about a metre below the surface of the ground and evidently belongs to the period of the graves (Reg. No. 2359B; Oxford).

PERFORATED CYLINDERS TYPE RA Plates XLIV and LIV

These curious cylinders were found only in three burials (87, 106, and 147), one example in each. They are somewhat thick for their size, hand-made, and perforated with a number of small holes somewhat irregularly placed in perpendicular rows. Two of these cylinders are shown in Figs. 37-38 of Plate LIV and also in Figs. 6-7 of Plate XLIV, No. 11. Their use is somewhat obscure, but I would suggest that they were filled with charcoal and placed in the pans of the braziers. This would give considerably more heating surface than the brazier would provide alone (Reg. Nos. 2702M; Oxford. 2242D; Oxford. 2402A; Field).

UNUSUAL SHAPES TYPE S Plates XLIV and LIV

All the pottery of which only one or two examples have been found is grouped together in this section. It is hoped that it will be possible to split them up into separate types when further specimens have been found. All the examples illustrated come from mound "A," and there is no reason to think that those that were not found in actual burials were otherwise than of the grave period. These specimens were in all probability either thrown or washed out of the burials that had been disturbed, or they belonged to small houses of the same period which have disappeared.

Figs. 39-42 of Plate LIV are simple cups of well-baked clay, one of which was found in each of burials 84 and 87. They are all wheel-made and very similar to type H, except that they are more elongated and that three out of the four of them have flat bases (Reg. Nos. 2371B; Field. 2221B; Field. 2702L; Baghdad).

Figs. 43-44 are hand-made. Each has a flat base and the rim compressed at one end to form a handle, which has a hole through it. The rectangular form of Fig. 44 was effected by squeezing out the corners (Reg. Nos. 2594C; Oxford. 2551; Field). Fig. 50 is unusual in being oval in section with a very immature and unstable base. It is made of a fairly thin, red ware with a polished surface. It is most unfortunate that the upper part of this flask could not be found (Reg. No. 2802). Fig. 51 is another hand-made dish, which is especially valuable because it was found with other pottery in grave 123. This specimen is also illustrated in Fig. 11 of Plate XLIV. The length of this interesting piece is 130 millimetres. It is plain on the inside, but the outside is roughly ornamented with perpendicular strips of clay, one on either side of each corner, one at the centre of each end, and in three groups of two on either side. The base is flat. In each side and end there is a hole about half way down, arranged so that there are two holes at one corner and two at the corner diagonally opposite. The purpose of these holes is difficult to understand as they are too far down to serve as holes for suspension (Reg. No. 2583; Oxford). Fig. 54 is of yellow paste, thick and heavy for its size, with a rough undulating neck. The base is flat and shows signs of scoring, otherwise this jar would be regarded as being of later date. It is decorated with a spiral line around the shoulder (Reg. No. 1557; Field). Fig. 55 is a most interesting jar. It is wheel-made, with a deep projecting beading at the junction of the neck and shoulder (see also Plate XLIV, Fig. 12). The paste of which it is made is very coarse and sandy, and contains a large amount of foreign matter. It is light red in color, and has been thinly coated with a cream-colored slip. This jar strongly resembles in both form and make the vessels which are used at the present day to collect the water dripping from the pointed base of a very large water-jar. It was found lying in front of the face of one of the two bodies in grave 56 (Reg. No. 1964M; Field).

Figs. 45 and 52 are simple, hand-made jars of model size and of the roughest make. Fig. 46 is of light yellow ware and roughly finished. It has a small neck and mouth with a fine slit only as the orifice. Figs. 47-49 are a series of small pottery dishes of a type which turns up now and again in "A" mound, though one has not as yet been found in a grave. They are always wheel-made and well-shaped, and I am inclined to think that they are really covers for small jars, for which purpose they are certainly well adapted. Fig. 53 is a small jar with a pointed base and wide mouth. It was found outside the wall to the west of the palace, at a depth of 2 m below the surface. Fig. 56 comes from burial 88, where it was found behind the pelvis of the body. It is well-made and light red in color (Reg. No. 2252A; Baghdad). The shape of Fig. 57 suggests that it was originally made in metal. This jar was found just behind the head in grave 51. It is very hard-baked, and has a straw-colored surface which may be a slip. This interesting jar is also shown in Fig. 5 of Plate XLIV, No. 11 (Reg. No. 1891B; Field).

A specimen similar to this one has been found at Tell el-Obeid by Woolley. Figs. 60-64 are all hand-made pottery. The base of Fig. 61 has been pinched to form four small feet. Fig. 58 is a small jar of most unusual form. It has a neat, thin ring base, below which the bottom of the jar projects slightly so that it is not very stable. The long heavy neck which dominates the body is most curious. This jar was found in one of the small rooms on the summit of the mound, and is therefore almost certainly of the grave period (Reg. No. 2089C; Baghdad). Fig. 59 is a large asymmetrical jar of very heavy make, especially at the base. It would have been considered as a late type, if it had not been found as low down as 2 m below the surface of the ground. A small flat base is not generally associated with jars of this kind.

TOOLS AND WEAPONS

A considerable number of fine copper tools and weapons were found this season in the burials of the "A" mound, comprising battle axes, adze axes, daggers, and knives; and many examples of the curved copper blades similar to those found during the season 1923-24. In the majority of cases the preservation was good, especially among the more substantial specimens from which in some cases the patina can be readily chipped, leaving the surface of the copper beneath almost intact. The majority of the tools and weapons were first cut from sheet copper and then fashioned by hammering, which besides shaping the implement also had the effect of toughening the metal. Only the larger weapons, such as the three battle axes illustrated in Plate XXXIX, No. 7, were cast. These show exceptional skill in the art of casting, and their surfaces are surprisingly clean, making due allowance for the patina that covers them.

In many of the graves, model weapons were placed with the dead. These were either very small, or they were exact copies in size and every respect of the real weapons, except that they were made in very thin metal, in some cases a millimetre thick. These weapons were, of course, useless in actual warfare, but amply served the purpose of burial with the dead. The same type of battle axe and adze-shaped axe as pictured in Plate XXXIX, Nos. 7 and 9, has also been found in Elam. At Tepeh Musyan, about 150 km west of Sisa, Gautier and Lampre found a battle axe and adze blade of exactly the same type as those in the "A" cemetery and also double-pointed arrow-heads similar to those found in the mound. Apart from other evidence discussed below, these three objects and especially the first prove an undoubted connection with Elam.³⁷

Little can be said as yet about the exact composition of the copper recovered from the burials submitted to the Special Committee of the British Association, which is working on this subject. The results are not published. This report, as far as it concerns the tools and weapons of the "A" cemetery, will be included in a succeeding publication. All the weapons of offence have cutting edges, which suggests that they were intended to be used against thick clothing or light armor, such as leather jerkins and head-pieces. That helmets were worn by soldiers in the period of the "A" cemetery is proved by their being worn by the spear-men of Eannatum II in the Stele of the Vultures, where they were the shape of a close-fitting cap terminated by a blunt point at the top. Such a cap as this might be of leather or even of thin copper.³⁸

Every weapon or tool found in the cemetery or elsewhere at Kish has a double slope to its edge, even including the chisels. This is always the case with primitive tools, the single slope not appearing until late times either in Babylonia or in Egypt. An interesting feature of the smaller tools and weapons, such as spear-heads, arrow-heads, nails, etc., is the presence of a doubled-sloped chisel-

point at the end of their shanks. This facilitated their being inserted in a wooden shaft without splitting it, and would suggest that reeds were not used for arrow-shafts nor bamboos for spears, as anything with a hollow interior would not require an edge on the head of the weapon.³⁹ It is not yet certain whether the copper sheets from which most of the objects were cut were cast in sheet form. The fact that most of the smaller objects seem to have been beaten out of square or rectangular rods of copper would imply that the metal was hammered into this form before sale or for convenience in working. This squaring, however, seems in most cases too good to have been done with a hammer, and its extreme regularity suggests casting.

In connection with these weapons with cutting edges it is noteworthy that not a single example of a mace-head was found in the graves, though specimens were found in the palace beneath. It would seem that this type of weapon had already passed out of use, except for ceremonial purposes, and the fact that one was placed in the hands of the god Ningirsu in the above mentioned Stele may probably be put down to conservatism. A mace-head would be practically useless against the thick head-pieces worn by some of the soldiers of Eannatum.⁴⁰

BATTLE AXES Plates XXXIX and LXII

Battle axes fall naturally into two classes—those which are socketed, as Figs. 1-4 of Plate LXII and those which are adze-shaped, as Figs. 12-13, 18-20 of Plate LXI. A socketed battle axe was found in graves 74, 80, 104, 107, 128, and 135, and others which obviously come from graves were found in the mound. The finest examples are illustrated in Plates XXXIX, No. 7 and LXII, Figs. 2 and 4. Unfortunately, two of the graves in which battle axes occurred had been disturbed anciently, so the position of only four could be determined. In graves 107 and 135 the axe was placed a short distance from the front of the face, and in burial 80 it was close to the top of the head. In grave 104 the weapon lay just behind the pelvis, which suggests that it was carried in the belt, as are the knobkerries of the natives of the present day. The axe shown in Plates XXXIX, No. 7, and LXII, Fig. 1, is of cast copper, and is 106 mm long. It was found at a depth of a metre below the surface of the ground, and evidently once was part of the equipment of a burial (Reg. No. 2034; Baghdad). The similar axe (the lower one in No. 7) comes from burial 104. It is 142 mm long, and the thickness of the blade at the centre is 7.50 millimetres. It is also of cast copper, and is in such excellent condition that the patina could readily be scaled off (Reg. No. 2448; Oxford).⁴¹

The third battle axe (the middle one in No. 7) is of a different type. It is 133 mm long, and has a curved cutting edge at the end, which is 37 mm wide. Behind this, the blade narrows and widens out again slightly at the haft. This latter is formed by bending the end over to form a socket, which is strengthened by turning over the sides to hold the tongue in place (see also Plate LXII, Fig. 3, Reg. No. 2342; Oxford). The axe found in grave 74 is made of very thin sheet copper. Its haft is formed by rolling over the end farthest from the cutting edge to form a socket for the handle. The blade is of the same shape as Fig. 1 of Plate

LXII (Reg. No. 2034). Fig. 4 of Plate LXII has a strong heavy blade evidently intended for active use. Its length is 92 millimetres. Though it is of cast copper, there is only a suggestion at the back of the socket of the rib usually associated with cast specimens. It was found in burial 135 (Reg. No. 2712; Oxford. Plate XLIII, No. 11). The three battle axes found in burials 80, 107, and 128 are of a type similar to Fig. 2 of Plate LXII. They are made of very thin copper, and probably were used merely for funerary purposes. That from burial 107 was unfortunately broken by a man's pick, and all the pieces could not be found. Traces of wood were found in the socket of the axe taken from burial 128 (Reg. Nos. 2191; Oxford. 2397; Field. 2647; Field).

From the presence of the rib at the back of the sockets of the cast battle axes it would seem that their form was derived from earlier objects made of sheet metal. Indeed, this rib is generally present on the model weapons found both last year and this. It seems to have originated in the endeavor to accommodate an overlarge socket to the wooden handle by squeezing the back of the socket together. Besides providing a tighter fit, the rib also had the effect of considerably stiffening the back of the socket. Its use was therefore carried on when these objects were made of cast, instead of sheet, metal. It seems probable that besides being fixed in the sockets, the handles were also lashed to the blades. The narrowing of the blade toward the socket certainly suggests this, as otherwise its narrowing would merely be a source of weakness. The socketed battle axe was unknown in Egypt in early times. It appears to have been introduced into that country from Syria,⁴² which probably borrowed it from Babylonia.

ADZE-SHAPED BATTLE AXES

Plates XXXIX, No. 9 and LXI, Figs. 5, 7, 12, 18-19, 20

This type of axe was found in burials 66, 78, 79, 92, 93, 98, 105, 113, and 131. In three graves the axe was close to the head; in one, close to and in front of the shoulders; in four close to the pelvis, and in the remaining grave, its position could not be determined owing to the burial having been disturbed. It will probably be argued by some that these objects were not used as battle axes at all, but that they are adze blades. This is, of course, possible in the case of the smaller and rougher specimens, but I am inclined to regard these as battle axes which were made especially for burial equipment. The fine weapons illustrated in Figs. 2-3 of Plate XXXIX, No. 9, and in Plate LXI, Figs. 18-19, could hardly have been used for any other purpose than that of warfare. These weapons were probably firmly lashed in a cleft stick, and they would no doubt have made very effective weapons of offence and defence.

Fig. 5 of Plate LXI comes from burial 78, and is 123 mm long with the cutting edge at the wider end. Fig. 7 was found in grave 92. It is a very heavy blade, flattened and widened at its cutting edge. As its upper ends show traces of burring, it is possible that this might be a metal chisel (Reg. Nos. 2182; Baghdad. 2292; Baghdad). Fig. 18 is long and narrow, and has been hammered out at the end to form an edge. On one side of the weapon the imprint remains in the

patina of a woven linen (?) material (Reg. No. 2303; Field). The fine specimen illustrated in Fig. 19, unfortunately, did not come from an actual grave. It is 192 mm long, and the breadth of the cutting edge is 41 millimetres. A reproduction after a photograph of this is also given in Plate XXXIX, No. 9 (the middle weapon, Fig. 3, Reg. No. 2151; Field). Fig. 20, from burial 105, is 2 mm thick, and has an edge 39 mm wide. It was found together with Fig. 13 of the same plate. The latter, however, is only 63 mm long, and would seem to be a model (Reg. No. 2373; Oxford. 2376; Baghdad). Fig. 12 is made from thin sheet copper, and for this reason was also, in all probability, especially made for burial (Reg. No. 2181; Baghdad).

Figs. 21-23, two of which come from graves, are all of the thin sheet metal type. The first has a hole at the top which suggests that it once was riveted. Fig. 22 has been inserted in this plate by mistake, and should have been included with Figs. 8 and 9 of Plate LXII (Reg. No. 2349; Field. 2040; Oxford. 2322; Field). The fine blade (Fig. 1 in Plate XXXIX, No. 9) is oval in section. It is 228 mm long, 46 mm wide at the cutting edge, and 10 mm thick at the centre. The top of the weapon is almost pointed, then widens out gradually to the cutting edge which is curved. Whatever may be said as to the other adze-shaped weapons, this battle axe could never have been used as an adze owing to its oval section. This weapon was evidently a casting, and though somewhat corroded in parts, it shows smooth and perfectly finished faces. It was found only 30 mm below the surface of the ground, and no objects with which it could be associated were found in its vicinity. None the less it is obviously of the same period as the graves from one of which it may have been taken anciently (Reg. No. 2470; Baghdad). This type of weapon with both straight and rounded tops is to be found in most parts of the ancient world from very early to comparatively late times. The pointed top is apparently first met with in Egypt in the XXVIth dynasty.⁴³

CELTS

Though no stone celts were found in the graves of the cemetery, a number occurred in the mound. They are described in the last chapter. As they were all unearthed at no great depth beneath the surface, these celts do not seem to have belonged to the period of the palace. They were probably the weapons of the people of the period of the cemetery.

STONE MACE-HEADS

No mace-heads were found in the graves, and this form of weapon seems to have been confined to the period of the palace. For the description of mace-heads found in the mound, see last chapter.

CURVED BLADES Plates XXXIX, No. 6 and LXI, Figs. 2-4, 10-11

The purpose of these curious blade-like objects is still uncertain, although owing to the number obtained from this season's work considerably more infor-

mation about them is available now. A pair of these curved blades occurred in each of burials 80, 87, 92, 93, 104, 105, 107, and 128, except in 92, where only one was found. As this last was an undisturbed burial, the conclusion is justifiable that only one blade was placed with the dead man. The fact (with the one solitary exception) that it is always *two* blades that are found with the dead naturally suggests that a pair was used for some purpose—a supposition borne out by the facts that the two are always alike in size and shape, and, moreover, are generally found adhering to one another. They are always of thin copper, and vary in thickness from just over 1.50 mm to 3 millimetres. In shape they vary slightly in the different graves, as will be seen in Plate XXXIX, No. 6. The curved sickle-shaped type at the top of the illustration is the most frequently found (burials 80, 87, 92, 93, 104-105. Reg. No. 2192; Oxford). An almost straight type occurred in grave 128 (Reg. No. 2637; Baghdad). The blades found in burial 107 show a marked double curve (Reg. No. 2398; Oxford).

In the Stele of the Vultures a blade or sceptre, of the type of the lower one in No. 6, is carried in the right hand of the king riding in his chariot. It appears to be in three pieces, all of about the same thickness, lashed together at intervals.⁴⁴ In the register above this scene, the king is again shown carrying one of these blades of the straighter type, but of this, unfortunately, part is broken away. An implement of very much the same shape and form is also wielded by a man in an interesting scene carved on a piece of shell now in the Louvre.⁴⁵ Similar objects occur on archaic cylinder seals, where their bearers seem to be using them in the pursuit of antelopes and other game. It would seem, therefore, that these curved blades represent an instrument either of warfare or the chase, or of both.⁴⁶

In the examples taken from the graves of the "A" cemetery, a definite handle is always provided at one end. Though it is in most cases too small properly to accommodate the hand, yet it would serve as hold for a cord. The question arises as to the kind of material placed between these two copper blades; that something lay between them is suggested by the three layers of the sceptre-like object carried by Eannatum and also by the fact that in one of the blades recovered from the burials at "A" a copper rivet still remains projecting 7 mm above the blade.⁴⁷ In all probability, wood was the material placed between the blades and secured firmly to the metal facing on either side of it by lashings or, in some cases, by rivets. Early in the season we realized the possibility of wood being at one time present between these blades, but we have as yet found no trace of this or any other material. This, however, is not surprising, for wood has a very short life indeed when lying any distance below the damp Mesopotamian soil. It seems in some soils to disappear entirely without leaving any trace behind. It has been suggested in some quarters that the implement carried by Eannatum is a throwing stick. If so, the objects found in the burials served the same purpose. I do not, however, think that a valuable metal like copper would be used for this purpose, even though it could perhaps be recovered. The club-like objects made with these curved blades were more probably used for striking purposes; and, if so, would be the prototype of the scimitar, which they somewhat resemble in form.⁴⁸

The position of these objects in the graves varies somewhat. In burials 92, 93, and 107 they are found close to the pelvis; in graves 87 and 104 just above the head; and behind the shoulders in graves 80 and 105. In burial 128, which was disturbed, there were no traces of bones, and the position of the copper blades could not therefore be determined. The exact size of these blades can be ascertained from the line drawings in Plate LXI; those not illustrated vary but little from those that are (Reg. Nos. 2313; Field. 2246; Field. 2192; Oxford).

DAGGERS Plates XXXIX, No. 8 and LXII, Figs. 15-20, etc.

Copper daggers were found in burials 40, 47, 57, 69, 74, 78, 79, 88, 92, 93, 104, 107, 128, 131, 135, and 136. Taking only those burials, eight in number, which were undisturbed, the dagger was found sufficiently close to the pelvis to warrant the assumption that it was worn in the belt or girdle. Of the two daggers in burial 104, one was placed in front and the other behind the neck. The three finest daggers are illustrated in Plate XXXIX, No. 8. The first of these comes from burial 107. It is 263 mm long, including the tang, and its thickness in the middle, down which two fine lines are incised, is 3 millimetres. The short tang has three rivets, one above and two below, to which traces of wood were found adhering, which must have formed part of a handle about 19 mm thick. Traces of a leather scabbard also were found on the blade (Reg. No. 2396; Baghdad).

The second dagger (Reg. No. 2730; Field) is of fine make, but the blade is sadly corroded. Its exact length could not be determined with absolute certainty, for it was broken across in several places, but it can be gauged by the fact that it is 43.50 mm wide in the widest part. The hilt is made of ivory and was found broken into many pieces. The base of the hilt is decorated on both sides with a thin gold band, one edge of which is turned under the handle and concealed between it and the blade. The handle is riveted to the short tang of the blade by three copper rivets, whose heads are sunk to allow of the insertion of three small gold studs on either side. Only one of these now remains, and it is clearly visible in the reproduction. The handle is unusually long for this type of weapon, being 98 mm in length. This dagger was found in burial 104 together with another, which is illustrated in Plates XXXIX, No. 5 and LXII, Fig. 15. This latter weapon (Reg. No. 2438; Field) is of unusual size, being 27.30 cm long and 3.50 mm thick. The handle, which was probably of wood, was attached to the blade by means of four rivets, of which portions remain in three of the holes. The third dagger in Plate XXXIX, No. 8, comes from burial 47 (see also Plate LXII, Fig. 16). A semilunar stop projects slightly beyond the edges of the blade, and behind it there is a hollow, rounded copper hilt about 45 cm in length. A wooden handle was probably once inserted into this hollow hilt (there are still traces of wood in the top of the hilt, which is secured to the blade by three rivets); for, as it stands, the hilt seems too short to have been of much use in holding the dagger. The total length of the dagger and hilt is 220 cm (Reg. No. 1839; Oxford).

Fig. 17 of Plate LXII has a fine, thick blade with three rivets for a handle. Two fine lines are incised down the centre of the blade on either side (also illus-

trated in Plate XLIII, No. 11). It was found in burial 135 (Reg. No. 2708; Oxford). Fig. 18 from burial 40 is also a substantial blade, being 3.50 mm thick in the middle. It has likewise two incised lines down the centre of the blade about 1 mm apart, but they are partly obliterated by corrosion (Reg. No. 1577; Baghdad). Fig. 19 was cut from a heavy piece of copper sheeting. Along the edge of one side of the blade there is a distinct pattern, the result of the impress in the patina of what must have been an ornamental sheath, which was probably of tooled leather work. This pattern cannot be seen anywhere else on the blade. For this impression to have been made, the dagger must have been withdrawn from and laid on its sheath when placed in the grave. The inside of the sheath would hardly have been decorated unless it was made of embroidered fabric—a possibility which must not be overlooked. This weapon was found in burial 74 (Reg. No. 2138; Field).

Fig. 20 is also of sheet copper, and must have been made expressly for burial equipment. Its extreme thinness would hardly warrant its actually being used as a dagger. It was one of the objects found in burial 57. Fig. 22 was cleared from burial 131. It has a short tang with two rivet holes side by side. It is made of thin sheet copper, and is useless as a weapon (Reg. No. 2675; Field). Fig. 23 is a more substantial dagger, but unfortunately its upper portion is missing. It was found at a depth of 3 m below the surface of the ground, not in a burial (Reg. No. 2155; Field).

None of the daggers found up to the present in the graves of the "A" cemetery appears to have been cast. They are cut out of sheet metal, and then hammered from the centres toward the edges, leaving an extra amount of metal down their centres for stiffening purposes. The thickness of metal in the centre of the daggers, however, never exceeds 3.50 millimetres. This hammering into shape had the advantage of tempering the metal and making it springy. It also served to close the pores of the metal, with the result that these daggers have survived to the present day despite a damp and salty environment. Beyond this thickening in the middle there are no signs of a definite mid-rib, though that such was known is proved by the example found last year in burial 28, which has a conspicuous mid-rib. These daggers from the "A" cemetery appear to belong to the period when the mid-rib was coming in, and it is possible that this feature was first suggested by the fine double lines engraved on the daggers in Plates XXXIX, No. 8 and LXII, Figs. 17-18. As well as being secured by rivets, these daggers are cemented into their handles. Traces of the cement, which seems to have been bitumen, are present on most of the tangs. Such a cement was necessary to prevent shake, which even the presence of three rivets would not obviate.

KNIVES Plate LXII, Figs. 6, 10, 11, 21

In some cases it is a difficult matter to distinguish between a dagger and a knife, as weapons of both classes have double cutting edges. Those, however, which have long tangs showing no signs of rivet holes, may have been employed as knives rather than daggers. Small blades such as 6 and 21 could hardly have

been used for offensive purposes. Only five examples of knives were found this season, in graves 65, 71, 78, 92, and 136. The specimen from burial 65 is illustrated in Plate LXII, Fig. 11. It is 154 cm long, 1.35 cm wide, and its blade was beaten out of a piece of copper wire rectangular in section, part of which unaltered served as a tang (Reg. No. 2020; Field). Figs. 6 and 21 and a knife from burial 136 are all small and made of very thin sheet copper (Reg. Nos. 2111; Baghdad. 2170; Baghdad. 2726; Baghdad). Fig. 5 has been included among the knives of the "A" cemetery, though it is of a most unusual shape. It appears to have been either washed or thrown out of a grave. It may possibly have been employed for leather work, for which it seems adapted. The handle is 11 cm long and 5 mm thick, and is rectangular in section. The blade is triangular in form, probably with a cutting edge on either side. This tool was found in some small rooms on the summit of the mound (walling "Q" of the palace), which belongs to the period of the graves.

SPEAR-HEADS Plates XXXIX, No. 1 and LXI, Figs. 1, 16-17

Only one burial (105) contained a spear-head, though two others were found which must originally have belonged to burials. The spear-head from the burial (Plate LXI, Fig. 17) is of small size, being only 16.50 cm long and 3 mm thick in the middle of the blade. It is, however, a serviceable weapon. Its tang is square in section, and tapers gradually to a chisel point, which was probably made to allow of the easy insertion of the tang into the shaft (see also Plate XXXIX, No. 1. Reg. No. 2372; Field). Fig. 16 of Plate LXI is much larger. It was found near the surface on the western side of the mound, and though somewhat corroded, it can be readily cleaned. It measures in all 29.20 cm in length. The tang is hexagonal in section and of large diameter in proportion to the blade. A slight thickening down the middle of the blade seems to be carried onto the tang for a short distance. It is difficult to see how a tang of this diameter could have been inserted in an ordinary spear-shaft, as the wood would need to be very thick to hold it. The shaft, indeed, must have been quite a thick pole, and very similar in appearance to the heavy shafts carried by the spear-men of Eannatum in the Stele of the Vultures (Reg. No. 1814; Baghdad). Fig. 1 (also shown in Plate XXXIX, No. 1) is a spear-head of very light make, which may have been used for throwing. The blade is narrow, and the circular tang widens slightly near the end to form a stop beyond which the tang is square in section and narrows to a chisel-point. This specimen was found at a depth of 1 m on the north of the mound (Reg. No. 2731; Oxford). The three spear-heads are of the simplest make and are hammered into shape from pieces of copper rod which quite possibly were made by casting. The solid tang of the largest specimen can in a way be paralleled by the large Tello spear, whose end, however, seems to have been riveted to its shaft.

RAZORS Plates XXXIX, No. 3, LXI, Fig. 22, and LXII, Figs. 7-9, 14

This name, because of its apparent suitability, has been given to a group of metal objects with a rounded lower edge and notched upper portion. From their

very shape they can hardly have been used as adzes, added to which they are too thin. These objects occurred in seven graves (40, 65, 67, 77, 117, 122, 127). In four of them (67, 77, 117, 127), they lay just behind the head; in one (65), behind the shoulders; in burial 122 a specimen lay close to the top of the head. The seventh grave had been disturbed, and the exact position of the objects in it could not be determined. The razor (Fig. 7 of Plate LXII) is leaf-shaped with a narrow base turned up to form a small hook, and there were remains of fibre around the narrow end just below it. An exactly similar tool was also found in burial 117 (Reg. Nos. 2023; Field. 2505; Field). Fig. 8 was found in one of the rooms on the summit of the mound, and evidently belongs to the cemetery period. The cutting edge is at the broad end, and a rather sudden narrowing at the top may have been worn by or intentionally made to hold the thumb (see also Fig. 2 in Plate XXXIX, No. 3. Reg. No. 2120; Field). Fig. 9 also has a rounded cutting edge, and the notched upper portion was obviously made to accommodate either the fingers or a handle (Reg. No. 2576; Oxford). Fig. 14 (also illustrated in Fig. 3 of Plate XXXIX, No. 3) was found to have been anciently broken at its wider end which shows but little indication of an edge. There is the usual depression for a firmer grip at the smaller end (Reg. No. 2161; Field). Fig. 22 of Plate LXI (inserted here by mistake) is obviously of the same type. The cutting edge is at the broader end; beginning 30 mm from the narrow end and on one side only, the margin of this tool is slightly serrated for a space of about 60 millimetres. There is a slight hollow on the opposite side, apparently for the thumb. This serrated edge can be clearly seen in the reproduction of this tool in Plate XXXIX, and is paralleled in the modern razor (Reg. No. 2040; Oxford). The razor found in burial 127 is 11.10 mm long with a rounded edge measuring 4.30 cm across. It is of the same type as Fig. 8 of Plate LXII (Reg. No. 2120). All these razors are cut from thin sheet copper, and average 1.50 mm in thickness. They are not unlike the razors found in Egypt in the XVIIIth dynasty, except that they seem never to have been provided with a wooden or metal handle as were the Egyptian ones, for in no case are there any signs of rivet holes. A cleft stick, however, could quite well have served the purpose of a handle, and, being wood, all traces of it would easily have disappeared.

CHISELS Plates XXXIX, No. 1 and LXII, Figs. 12-13

Two small chisels were found in each of graves 92 and 136, but their position in the burials could not be determined owing to the difficulty of tracing the bones in the first grave and the great disturbance that had taken place in the second. The chisels in burial 136 are square in section, one being 9.40 cm long, and the other 8.40 centimetres. Both appear to have been hafted, as there were traces of wood at their blunt butts (Reg. Nos. 2744 A and B; Field). Of the specimens in grave 92, which resemble Fig. 4 in Plate XXXIX, No. 1, one was in a very bad condition. Traces of a wooden handle still adhered to the other, which is 6.50 cm long (Reg. No. 2289; Oxford). Fig. 12 of Plate LXII (also shown in Fig. 4 of Plate XXXIX, No. 1) widens slightly at the base. It is 6.80 cm long, and has the usual double slope to the edge (Reg. No. 2156; Baghdad). Fig. 13 is 4.70 cm long,

square in section, and also has a double slope to its edge. This example is also illustrated after a photograph as Fig. 2 (Reg. No. 2144; Field). Both these examples and others were found in the small rooms on the top of the mound and are undoubtedly of the grave period. Fig. 3 in the photograph is 10 cm long and 4.50 mm square in section. It does not appear to have been much used (Reg. No. 1570; Field). Fig. 1 was found 75 cm below the surface. It is 12.70 cm long and 5 mm square in section (Reg. No. 2496; Field). Fig. 5 was found in one of the small rooms on the summit of "A." It is 10 cm long and square in section. The cutting edge is very small and evidently intended for delicate work (Reg. No. 2121; Field). All the chisels found in the "A" mound, whether in the graves or not, are square or slightly rectangular in section, and all have double sloped edges. These copper tools were probably used for engraving, but none of them shows signs of having been used on very hard substances. Fig. 7 of Plate LXI has been discussed in the section on adze-shaped axes, but as its butt shows a certain amount of burring, it should perhaps be classed as a chisel.

ARROW-HEADS Plates XXXIX, No. 4 and LXI, Fig. 14

Only one arrow-head was found in the palace mound, but it unfortunately was not actually found in a grave, though there can be no doubt that it belonged to the period of the cemetery. It was found 30 cm below the surface of the mound, not far from its northern edge. This arrow-head is 5.40 cm long, and has two rounded prongs at one end and a chisel-shaped point at the other. It was thought at first that the two prongs were intended as barbs and that the arrow-head was fastened in a cleft in a shaft with these barbs projecting on either side. The arrows carried in the quiver fastened to the front of the chariot of Eannatum in the Stele of the Vultures are all represented with double points, and appear to be of the same type as the one found in the "A" mound. It is then to be supposed that the long single point was fixed in the arrow shaft and that the prongs were directed forward. Two arrow-heads of exactly the same type were found in graves of the same period as those of the "A" cemetery, but in another part of Kish (Reg. No. 2122; Baghdad).

FISH-HOOK Plates XXXIX, No. 4 and LXI, Fig. 15

The only fish-hook discovered in the "A" mound was found 50 cm below the surface of the summit of the mound. There is every probability, though no actual proof, that it is of the same date as the burials. It is 4.15 cm long, and resembles the modern fish-hook, except that it has no eye or even a thickening of the end of the shank. The line must have been tied to the shank, which is 3 mm in diameter, by means of a fine lashing. Very similar fish-hooks to this one were found in graves at Fara, proving that the type is an early one (Reg. No. 2386; Field).

HARPOON Plate LXI, Fig. 6

This object was found about 105 cm below the surface just above courtyard 6 of the palace. It was, therefore, in all probability, once part of the equipment of a

burial. Its total length is 9.50 cm, but it was found in two pieces, and the shank has been bent anciently. It may have been used as a fish-spear, its very serviceable barb, which is 7 mm long, being adapted to this purpose. This object must be a casting, for, from its appearance and the arrangement of the barb, it could hardly have been fashioned out of a piece of copper (Reg. No. 2681; Field).

SPATULA Plate XXXIX, No. 4 (lower figure)

This spatula is 13.60 cm long. It is made of a rectangular piece of metal which measures 5 x 3.50 mm in the middle. Both ends are flattened and slightly rounded. It was found in mound "A" at a depth of 1 m (Reg. No. 2728; Baghdad).

SPLIT-PIN Plate LXI, Fig. 8

The only split-pin found occurred in burial 47, and is made of flat copper wire about 2.50 mm thick. It may once have belonged to a wooden box, which has completely disappeared, but on the other hand it may be an intrusion in the burial (Reg. No. 1840; Field).

COPPER NAILS Plate LXI, Fig. 9

The copper nail in the same plate lay close beneath the surface of the mound. It is 3.20 cm long with a button-shaped head measuring 2.80 cm in diameter. The shank is square in section, and a portion of it is broken off. It probably once terminated in chisel a point, as do similar nails found elsewhere in Kish (Reg. No. 962; Field).

HONES Plates XXXVIII, No. 9 and LIX, Figs. 38-40

Only two hones were found, in graves 42 and 93 respectively. That from the disturbed burial 42 is shown as the lower figure of No. 9 of Plate XXXVIII. It is 16 cm long, 1.50 mm thick, and is a hard sandstone pebble of natural shape, which shows by the small amount of wear that it was not much used (Reg. No. 1611; Field). The hone from burial 93, the fourth in Plate XXXVIII, No. 9 and Plate LIX, Fig. 40, is a well-made tool, which is circular in section, and shows signs of a certain amount of use. The hole through its upper portion was cut right through from one side, and narrows as it proceeds. This hone was found near the pelvis, and presumably was carried at the waist in actual life (Reg. No. 2318; Field). That from burial 42 was in a disturbed grave, and its position could not be noted. Hones of uncertain date are treated in the last chapter.

FLINT IMPLEMENTS

No flint implements were found in the graves with the exception of a flint flake of ordinary form found in burial 152 and associated with pottery and a glazed bead in the form of a beetle. Flint hoes found in the debris of the mound are treated in the last chapter.

HOUSEHOLD AND TOILET ARTICLES

SPINDLES AND SPINDLE-WHORLS

Plates XL, No. 3, LVIII, Figs. 1-3, LIX, Figs. 15-18

The spindle illustrated in Plates XL, No. 3 and LVIII, Fig. 1, is made of copper. It was found in burial 11 with two curious rods (Figs. 2 and 3). As this burial had been disturbed, the original position of these three objects could not be determined. The spindle measures 2.85 cm in length, the shaft being 3 mm in diameter near the whorl. The hook had been anciently broken off, but the fact that there had been a hook is proved by the spindle found last season in burial 21. The whorl is a thin piece of copper, 4.10 cm in diameter and slightly domed. In order to provide the necessary weight, the hollow in the whorl was doubtless filled up with some composition, which became detached when the burial was disturbed. The purpose of the two copper rods found with the spindle is difficult to understand. Fig. 2 is 20.10 cm long, and is surmounted by a flat nail-like head, 15 mm in diameter. The staff is 4 mm in diameter immediately below the head, and gradually thickens to 7 mm in diameter at the end. The head was attached by splitting the top of the pin and bending the two portions over at the top of the head. Fig. 3, of slightly different design, is 21 cm long and 5.50 mm square at both ends and round at the middle, where its diameter is 4.50 millimetres. The head which is attached in the same way as in Fig. 2 is 16 mm in diameter. That these two objects were used in connection with spinning seems probable, and they may have been employed as distaffs (Reg. Nos. 2454, 2455; Field).

Several isolated spindle-whorls have been found. Fig. 15 of Plate LIX is a spindle-whorl of baked clay which has been poorly and roughly glazed. It was found 175 cm below the surface, and probably once belonged to a grave (Reg. No. 1832; Field). Fig. 16, from grave 49, is made of a white paste covered with a glaze that was originally green or blue in color (Reg. No. 1856; Field). Fig. 17, a finely-made whorl, is of steatite. It was found in one of the small rooms on the summit of the mound, which are probably of the grave period. It is 27.50 mm in diameter and 10 mm high (Reg. No. 2123; Field). Fig. 18 lay in front of the face of the occupant of burial 55. It is made of shell, and is divided into three parts by rough triangles, apices downward, which are decorated with parallel lines. Small pieces of lapis lazuli were formerly inlaid in the intervals between the triangles. The spindle itself was probably made of wood, and has accordingly disappeared (Reg. No. 1955; Field).

TOILET CASES Plates XLIII, No. 1 and LIX, Figs. 28B-30

Toilet cases were found in eleven burials of both sexes. Their position in those burials which were undisturbed (burials 63, 82, 92, 93, 104, 135) was close to the pelvis—a sufficient proof that they were either carried in the girdle or on a

cord suspended from the girdle. Two specimens were found in grave 92, which suggests that two people were buried there; but, though the bones in this grave were very difficult to trace owing to decay, there was no indication of a second body. Owing to corrosion it is impossible to examine any of the contents of these cases properly, for none of them can be withdrawn. Fortunately, however, sets of tools which had accidentally fallen from their cases anciently were obtained from several parts of the mound. Two such sets of tools are shown in Plates XLIII, No. 1 and LIX, Fig. 28B.

Toilet cases contain either three (burials 47, 57, 65, 92A, 93, 104, 128, 135) or four (burials 40, 69, 82, 92B) implements strung on a wire ring, the heads of the tools and the ring projecting from the top of the conical case. The sets from burials 57 and 82 seem, however, to contain only two instruments; namely, a pair of tweezers and an ear-pick in the first case and an ear-pick and a point in the second. When three instruments are found in a case, these generally comprise an ear-pick, a plain point, and a pair of tweezers; when four, a small knife is added. One of the cases is ornamented with silver bands secured by means of small rivets (the second in Plate XLIII, No. 1). In another specimen from burial 65, which no longer has a silver edging, the holes by which it was attached still remain. In every case but one, the containers for these instruments are made of thin copper rolled into a conical form with the edges slightly overlapping. Sometimes, but rarely, the upper edge of the container is turned over to stiffen it. In grave 135 the instruments with their case are entirely of silver; they are shown with other objects found with them in Plate XLIII, No. 9.

Each of the three or four instruments in a case is secured to a ring formed from a piece of wire with the ends twisted on each other. Each instrument hangs from this ring by a twisted loop, so that it is easily moved on the ring. There appears to have been nothing to prevent the instruments from falling out of the case, beyond jamming them in rather tightly. Neither is there any indication of how these cases were carried, unless the small holes which exist at the top of the rims of most of the specimens were used to sew the case to a garment or to a belt. Very similar toilet cases are used by natives of the Punjab at the present day. These modern examples are slung on a ring, and consist of tooth-pick, ear-pick, and tweezers. They are worn on a string around the neck, either in a case or without. Similar sets to those found at Kish have also been found at Bismya, in the so-called Semitic quarter.⁴⁹ Petrie⁵⁰ suggests that these instruments were used to extract thorns, the knife being used to open the wound, the point to press below the thorn and raise it, and the tweezers to extract it. In most of the examples from Kish an ear-pick is added.

HAIR-PINS Plates XL, Nos. 1, 2, 4, 5 and LVIII

Hair-pins were found in plenty during this season's work, and definite proof was obtained that they were worn by both sexes. This fact is important because it proves that the male Sumerian of the period of the graves wore long hair, an asser-

tion which has been disputed by many. All the hair-pins found are of copper, and some of them are of considerable weight, which would imply that the hair was thick and long. It is possible that pins were made of wood as well as of metal; but, of course, the former would not have been preserved. In all cases, except in those graves which have been disturbed, the pins are found close to the head. This suggests to me that these articles are not stilettos, but pins for the hair. The hair-pins found at Kish fall into four groups:—curved, coiled-headed, animal-headed, and round-headed.

The following list gives the registered numbers (with the museums where they are preserved) of the various toilet cases found during the season:—

		Burials	Registered Numbers
Plate XLIII, No. 1	Fig. 1	92	2284 Baghdad
	Fig. 2	0	2154 Field (see also Plate LIX, Nos. 29-30)
	Fig. 3	0	2007 Field (see also Plate LIX, Nos. 29-30)
	Fig. 4	93	2317 Field
	Fig. 5	0	2570 Oxford
	Fig. 6	0	2128 Baghdad (see also Plate LIX, Nos. 29-30)
	Fig. 7	57	1970 Oxford
	Fig. 8	135	2720 Oxford

CURVED HAIR-PINS Plates XL, No. 2 and LVIII, Figs. 12-13

Curved hair-pins were found in ten burials, but few of them were in a good state of preservation (burials 43, 63, 65, 101, 117, 125, 128, 139, 142, 144). The best preserved of these from burial 43 is illustrated in Plate XL, No. 2, also in Plate LVIII, Fig. 13. It is 28 cm long, and its head is ornamented with a roughly cut lapis-lazuli bead, 17.50 mm in diameter. The bead is capped by a thin plate of silver held on by the top of the pin, which is riveted over it. The upper part of the pin is square in section from the head to the flat middle portion. The greatest width of the latter is 13 mm, it is 5 mm thick, and is pierced with a small hole. Below the flat portion, the pin is round in section, and gradually tapers to a point (Reg. No. 1625; Oxford). Fig. 12 of Plate LVIII (also illustrated in Plate XL, No. 2, Fig. 2) comes from grave 117. This has a conical head of glazed paste which is fluted, and measures 17 mm in diameter. There is no hole through the flat central portion of the pin which has a maximum width of 10.50 mm (Reg. No. 2504; Baghdad). The third pin (Fig. 3) was found in burial 128. It is 19 cm long, the central flattened portion has a maximum width of 13 millimetres. The head is made of paste, which was once glazed, but is now in very bad condition (Reg. No. 2640; Baghdad). The fourth pin in the group is a small thin pin 104 cm long, which has a very slight flattening in the middle. This specimen was found in burial 125 (Reg. No. 2588; Baghdad). Those found in the other graves were in too poor a condition to be illustrated, but there were traces of a pattern on the flat middle portion of the pin in burial 142 (Reg. No. 2827; Field), which seems to be very similar to the decoration on two pins of this type found in the season 1923-24 in graves 9 and 12. It was formerly pointed out that the flattened portion of these pins was intended to prevent any movement of the pin in the hair, and also to prevent its accidentally falling out. I am still of the same opinion.

PINS WITH COILED HEADS Plate LVIII, Fig. 4

Only four pins of this type were found in the graves cleared this season (54, 105, 142, 143). The pin from grave 54 is well made with a fine point. The top of the pin has been flattened out, and then curled over in a whorl very similar to the pins numbered 5 and 7 in Plate XIX of last year's report (Reg. No. 1947; Field). This pin is 9.70 cm long, the width of its head is 6 millimetres. The second pin comes from burial 105, and is shown in Fig. 4 of Plate LVIII. This again is similar to a pin found last season. It is 17.90 cm long and 6 mm in diameter at the top, which has been bent over to form a half coil. There were traces of fibre in the hole through this pin, which may be the remains of a cord (Reg. No. 2374; Field). The pin from grave 142 is 14.50 cm long, its greatest diameter is 7 millimetres. It was in too corroded a condition to be sketched. That from grave 143 is 11 cm long and 6 mm in diameter (Reg. Nos. 2826; Field. 2843; Field).

ANIMAL-HEADED PINS Plates XL, No. 4 and LVIII, Figs. 19-21

Fig. 19 of Plate LVIII (also Fig. 4 of Plate XL, No. 4) was taken from grave 47. It is a thick, stocky pin with the head and horns of a cow (Reg. No. 1836A; Baghdad). Fig. 20 is a long, thin pin with large horns and correspondingly large ears below them. A large barrel-like projection represents the muzzle of the cow (see also Fig. 3 of Plate XL, No. 4. Reg. No. 2186; Field). Fig. 21 is a slim, well-made pin with the head, apparently, of a woman with prominent nose and large mouth. At either side of the head are large cow-like ears with horns above them (see also Fig. 5 of Plate XL, No. 4. Reg. No. 2039; Baghdad). The first two pins (1 and 2) in Plate XL, No. 4, are very similar to those mentioned. Both were found in grave 104; they measure in length 26.20 and 21.80 cm respectively (Reg. Nos. 2446; Oxford. 2447; Field). A short pin (only 10 cm long), from burial 55, is of the same type, but the face of the cow is roughly represented (Reg. No. 1951; Baghdad). The cow or human head on these pins is possibly a representation of the same deity as shown on the handles of the type A pottery, but who exactly this deity was remains to be determined. It is impossible to specify whether it is a cow's or a bull's head, but that the cow is indicated is probable, for the figures on the handled jars are all feminine. All these pins are made of cast copper, and on the whole are of creditable workmanship.

PINS WITH ROUND HEADS Plates XL, Nos. 1 and 5 and LVIII

These pins can, for the sake of convenience, be divided into two classes:—those with the solid heads which are one with the shank, and those with added heads. Pins of the first class are rare, but examples are illustrated in Plate LVIII, Figs. 14-18. Such pins were found in six graves altogether (burials 39, 50, 63, 75, 101, 122). The distinguishing feature is the heavy knob-like head which could have been formed only by casting. Fig. 18 from burial 75 is the finest specimen of this class that has yet been found at Kish, its length being 19.80 cm and the diameter of its head 2 centimetres. It must have been a very heavy ornament to wear in the hair (Reg. No. 2134; Field). Fig. 14, from burial 39, is 17.60 cm long with a

head 1.40 cm in diameter set rather crookedly on its stem (Reg. No. 1565; Baghdad). Fig. 15 comes from burial 50. It is 12.80 cm long, and is surmounted by a small knob (Reg. No. 1878; Field). Fig. 16 was found just below the surface of the mound. Its present length is about 5 cm, part of its point being missing (Reg. No. 2175; Field). Fig. 17 was found by itself in the mound. Its length is 10.70 centimetres. It has the feature (unusual in a pin of this type) of a hole for a ring or cord (Reg. No. 2295; Baghdad).

Pins of the second class with added heads were plentiful, specimens being found in no less than forty graves. There are three examples in burial 80, and two in burial 110. They are made from a round, square, or hexagonal rod of copper tapering to a round point; and a globular bead made of glaze, stone or other material was fitted on the thinned-out top of the pin to make a substantial head. The upper or lower parts or both of the beads are frequently capped with thin, dome-shaped pieces of silver or copper to give an additional finish. The thinned-out top of the pin after passing through the bead is slightly burred over to keep it in place. Sometimes this point is split and turned over on either side to hold the bead yet more firmly. In many of these pins a hole was made through the upper portion. This was to accommodate a wire ring, similar to the rings present in Figs. 28-29 of Plate LVIII. The object of the ring, which seems to have been found inconvenient in some cases and removed, was probably, as suggested in No. 1 of this volume, for a lock or strand of hair to be passed through it to prevent the pin slipping from the head. Such a contrivance must have been very necessary, for the weight of the pins is in most cases very considerable. In lieu of this copper ring which occurred in pins found in graves 63, 71, and 102, a cord would appear to have been used in some cases. Traces of a fibrous material were found in the holes of pins from graves 52, 66, 68, and 80, and the pin from burial 66 is encircled by four bands of fibre which appear to be the remains of a cord.

Those pins which are round in section from the point to the head were by far the most plentiful, numbering twenty-two examples in all. Those, that starting from a rounded point become square in section toward the head, came next in order of popularity, being fourteen in number (burials 55, 63, 66, 68, 77, 83, 102, 107, 113, 128, 130, 138, 141, 144). This latter style of pin is illustrated in Figs. 5, 6, 7, 11, etc., of Plate LVIII. Three pins, two of which are illustrated in Figs. 8 and 10, are hexagonal in section for rather under half their length (burials 56, 90, and 104). The upper part of Fig. 23 from burial 110 is octagonal in section. It would appear that all these pins were made from cast copper wire, either round, square, hexagonal, or octagonal in section, which was rounded toward the points by being rubbed down with some abrasive. The patina can readily be scaled from these pins which are well preserved, and they then show a smooth surface which would not disgrace a modern craftsman.

The points of interest of the straight pins with added heads which are illustrated in Plate LVIII may be briefly enumerated as follows:—

Fig. 5; burial 127. Upper portion square. Lapis-lazuli head somewhat roughly cut, supported in a cup of thin copper. A copper cap doubtless once

crowned the bead, but is now lost (Reg. No. 2614; Field). Fig. 6; burial 83. Upper portion square. Plain lapis-lazuli head and point missing (Reg. No. 2220; Field). Fig. 7. Upper portion square, point missing. Head of glazed paste with a copper cup above and below it. The top of the pin is split and turned over on opposite sides after passing through the copper pieces and glazed bead so as to secure all the pieces of the head firmly in position (Reg. No. 2419; Field. See also Fig. 1 of Plate XL, No. 5). Fig. 8; burial 90. Upper portion hexagonal. Head of glazed paste, roughly fluted. Hole through pin below head (Reg. No. 2271; Oxford). Fig. 9; burial 93. Upper portion round. Point missing, lapis-lazuli head ornamented with lines to suggest fluting. Cup-shaped pieces of silver above and below the stone bead. The top of the pin is split and turned over on opposite sides (see also Fig. 2 of Plate XL, No. 5. Reg. No. 2316; Field). Fig. 10 is the finest specimen of this type of pin found this season, both for size and finish; from burial 104. Upper portion hexagonal. Head is a large globular piece of lapis lazuli, set in a silver cup with a corresponding silver cap above it, held in position by split top of pin. This is an unusually large and heavy pin, and was found in the grave of a male (see also Fig. 3 of Plate XL, No. 5. Reg. No. 2429; Oxford). Fig. 11; burial 128. Upper portion square. This pin probably once had a head, and after the head was lost or broken, the projection made to receive it was removed, and the top of the pin rounded off. Hole through square portion near top of pin (see also Fig. 4 of Plate XL, No. 1. Reg. No. 2639; Field). Fig. 23; burial 110. Upper portion octagonal, point missing. Head lost anciently. Hole through octagonal portion. This pin is illustrated to show the method of fining down the top of a pin to receive a head (Reg. No. 2453; Baghdad). Fig. 24. Upper portion round. Lapis-lazuli head. Top of pin has been burred to hold the head (see also Fig. 1 of Plate XL, No. 5. Reg. No. 2546; Baghdad). Fig. 28; burial 102. Upper portion square. Glazed head, capped above and below by dome-shaped pieces of copper, held in place by burring, thinned-out top of pin. Below the head there is a hole in the pin through which is passed a small ring of copper wire whose ends are coiled on each other (see Fig. 5 of Plate XL, No. 5. Reg. No. 2425; Field). Fig. 29; burial 63. Upper portion square. Glazed head held in position by bending over top of pin. A piece of copper wire has been passed through the pin to form a ring (Reg. No. 1990; Field).

The pins illustrated in Plate XL, No. 1, all have plain, rounded tops. These were possibly made this shape, or their heads have been removed or lost, and their tops smoothed off in a similar way to Fig. 11 of Plate LVIII. The first, from burial 52, is especially interesting, as the top, when seen through a magnifying glass, shows the impression of a fine network of fibre, which may be the remains of a network that once enclosed the hair of the person in whose grave the pin was found. Fine strands of some material also pass through the hole in the pin. This pin is 26 cm long and 1 cm in diameter at the top (Reg. No. 1902; Field). The second is 23.60 cm long, 5.50 mm in diameter, and was found in grave 113. There is a hole through the pin 2.50 cm below the top (Reg. No. 2480; Baghdad). The third belongs to burial 77, and is 19.50 cm long (Reg. No. 2158; Field). The fourth has been discussed (see Plate LVIII, Fig. 11).

Of the pins in Plate XL, No. 5, all have been mentioned, except the fourth which comes from burial 107. This measures 24.50 cm long and 9 mm in diameter below the head. The head of the pin is composed of a bead of lapis lazuli capped above by a dome-shaped piece of silver. There seems to have been a corresponding piece below, which has broken away (Reg. No. 2395; Baghdad). Most of the heads are either of lapis lazuli or of glazed paste, which has now lost its color, and is generally in a very friable state. Judging from the color of the bead on the pin from burial 144, it would seem that occasionally these beads were of bitumen (this could not be examined without risk of destroying the bead), which may explain the reason why some are found with no trace of a head remaining. Glaze and lapis lazuli appear to have enjoyed an equal popularity as materials for making the heads of these pins, both being blue in color. Silver and copper were equally used to make the caps for the beads. Silver was used in burials 93, 104, 135, 141, and 144, and copper in burials 78, 102, 120, and 127 and in a pin from an unrecorded grave (Reg. No. 2419; Field). A gold cap, which may possibly have come from a pin, was found in burial 51. It is made of very thin metal, and has a small hole at the top (Reg. No. 1897; Field. Plate XLIII, No. 8, above the medallion). Fig. 22 in Plate LVIII is the head of a pin that was found in one of the small rooms on the summit of the mound. It is of glazed paste and ornamented by lines running vertically down the sides (Reg. No. 2104; Field). Fig. 25 of the same plate, which was found together with carnelian and shell beads in burial 142, is evidently a head that had come off a pin, and had been re-used as a bead. It is made of glazed paste (Reg. No. 2831; Field). Fig. 26 is a similar case. It is made of lapis lazuli, ornamented with fine incised lines. This head formed one of the beads in a bracelet in burial 67 (Reg. No. 2041B; Baghdad). Fig. 27, which comes from a disturbed grave in which no pin was found, is made of glaze, and is bluntly shaped and fluted (Reg. No. 2225; Baghdad).

NEEDLES AND BODKINS Plates XL, No. 1 and LIX, Figs. 1, 2, 5

Only two needles or bodkins were found actually in burials. Unfortunately, both graves (83 and 131) had been disturbed, so that the original position of the bodkins could not be determined. The one from burial 83 is shown in Fig. 5 of Plate XL, No. 1, and is 19.60 cm long. The eye, which was broken anciently, is made by slitting the top of the pin, which was slightly flattened for the purpose (Reg. No. 2216A; Field). The bodkin from grave 131 is very similar to the one illustrated in Fig. 1 of Plate LIX. It has a stout shaft, being 24.80 cm long and 6 mm in diameter at its thickest part. Its eye, 6 mm long, was made by bending the thinned-out top of the bodkin to form an elongated loop (Reg. No. 2676; Field). Fig. 1 of Plate LIX had its eye formed by drawing out the top of the pin to thin it and then bending it over. It is 17.50 cm long. It was found at a depth of about 1 m below the surface (Reg. No. 2080; Baghdad). Fig. 2 is also illustrated in Fig. 6 of Plate XL, No. 1. The eye, 3.50 mm long, is also formed by bending the top of the pin over. This object is probably to be regarded as a needle, being only 2 mm in diameter (Reg. No. 2257; Field). Fig. 5 of Plate LIX

is only 5.60 cm long. The top was turned over to form the eye, which was then enlarged by boring (Reg. No. 2623; Field). The seventh specimen in Plate XL, No. 1, is 14.70 cm long. The eye is broken, but enough remains to show it was formed by boring the pin instead of by bending over the top (Reg. No. 2100; Field). These needles or bodkins, which have the bent-over form of eye, can hardly have been used for ordinary sewing. They could have been employed only in leather work or basket work. Probably only the fine needles with bored eyes were used for sewing.

METAL BOWLS AND DISHES Plates XLIII and LVII

Metal bowls or dishes were found in twenty-four of the burials, male and female alike, some well preserved and others in bad condition. In some graves which were undisturbed they occupied various positions, showing that no particular place was allotted to them. In those undisturbed burials, in which only one specimen was found, the bowl was placed thus:—above the head in graves 51 and 135; in front of the chest or body in graves 55, 79, 93, and 139; below the feet in graves 87 and 97; and behind the body in 144. Burial 135 contained no less than four bowls, one of which was found above the head, a second in front of the body, and two just below the feet. In grave 104 two lay close to and below the feet. Five other graves, which had unfortunately been disturbed, contained more than one example each: two in each of burials 86, 87, 92, and 128, and three in burial 120.

To describe these copper bowls, they may be conveniently arranged in two groups—those without and those with handles.

Fig. 1 of Plate LVII was found in a badly shattered state in burial 135. Its shape is quite unlike anything that has been found at Kish up to the present. The simple rim is formed by beating out the metal all round to a width of 6 mm, its thickness in this place being 3 mm (Reg. No. 2707; Field). Fig. 2 is a plain bowl with a slightly flattened base. The impression of some fabric remains in the patina on the bottom of the bowl (Reg. No. 2846; Oxford). Fig. 3 was found in the mound, and does not come from a grave, though it probably originally belonged to one. It is illustrated because of its somewhat unusual shape (Reg. No. 2774; Field). Fig. 4 has a most unusual rim, which has been turned over all round so as to project 12 millimetres. There are four holes bored at regular intervals in the rim for suspension. It was unfortunately impossible to photograph this bowl owing to its being in pieces (Reg. No. 1892; Field). Fig. 5 is again unusual for its mouth which is of considerably smaller diameter than the body of the vessel (Reg. No. 2442; Field). Fig. 6 is very similar in conception to Fig. 3, except that its base is shallower and ring-shaped. Owing to the very bad condition of this bowl it could not be ascertained whether the ring base was soldered or riveted on (Reg. No. 2243). Fig. 7 is a round bowl with slightly flattened base, somewhat badly made and misshapen (Reg. No. 2424; Field). Fig. 9 is a deep bowl whose rim turns slightly inward, with a ring base by means of the stake. A simple handleless bowl from burial 135 is illustrated in Plate XLIII, No. 11. It is 5.80 cm high with a diameter of 11 cm, and is hemispherical with a plain rounded base.

Other handleless bowls and dishes were found, but they are not illustrated, as none of their shapes varies from those shown.

Bowls and dishes with handles were found in ten of the burials, and the finest specimens are illustrated in Plate LVII, Figs. 8, 10-14. Fig. 8 has a circular bowl with depressed, slightly rounded base. On one side of the rim there is a small curved handle, wide at its attachment to the rim, and narrowing slightly, whose end is turned under. This was badly bent by earth pressure, but unbroken (Reg. No. 2278; Field). Fig. 10 is of similar type. Its handle, wide at its attachment to the rim, projects upward, and narrows almost to a point (Reg. No. 2788; Oxford). Fig. 11 is again of the same type, but with a long handle curled over at the end. See also Plate XLIII, No. 4 (Reg. No. 1950; Baghdad). Fig. 12 was badly bent and slightly broken anciently. The handle is short and curled under, and the depressed base is barely perceptible (Reg. No. 2247; Field). Fig. 13 has simple fluted sides, the hollows of the fluting being on the outside. The handle is 2.50 cm long and 2.45 cm wide at its attachment to the dish (Reg. No. 1581; Field). Fig. 14 is of very unusual type, for its handle apparently also served the purpose of a spout, the sides being bent upward to form a semicircular trough. This dish was found in a badly broken condition, and should receive further examination after it has been properly cleaned and repaired (Reg. No. 2443; Field).

A handled bowl from grave 135 is shown in the reproduction of part of the burial group (Plate XLIII, No. 11). It is a wide, shallow bowl with a small handle on one side whose end is rolled over to form a coil. It has a slightly depressed rounded base, and is 3.80 cm high and 12.50 cm across the top. The diameter of the base is 5.40 cm, and the length of the handle 1.35 centimetres. The width of the handle is 1.80 cm (Reg. No. 2710; Oxford). Of the three handled bowls not illustrated, two are very similar to Fig. 10. The third resembles Fig. 12, except for the short handle being flat instead of being curled under at the end (Reg. No. 2541; not kept. 2644; Field). The handled bowl from burial 107 was in too broken a condition even to be registered. All these bowls and dishes, whether with or without handles, are beaten out of sheet copper. The handles are always part of the vessel, and none is soldered or riveted on. There may possibly be an exception in Fig. 1 of Plate LVII. The average thickness of the metal in these bowls and dishes is 2 centimetres. They are all, it should be noted, of very simple make, and give the impression that metal work, though advanced in other directions (for example, the cast animals found by Woolley at Tell el-Obeid), was still primitive in the case of copper utensils. It is possible, however, that as copper was a very valuable metal in early times, only inferior vessels were placed in the graves, the more elaborate specimens being reserved for the use of the living. The shape of the simpler bowls recalls to mind the metal food-dishes so extensively used in Persia and India.

PERSONAL ORNAMENTS

MEDALLIONS Plate XLIII, Nos. 8-9

Silver medallions very similar in type to those discovered last season have again been found in ten of the burials. They were found in male and female graves alike, also in those of children. The fact that this form of ornament was not exclusively female is definitely proved by its being found associated with a battle axe in grave 104 and with an adze-shaped axe in grave 135. I concluded last year that medallions were worn either at the breast or at the waist, and this conclusion is again borne out by the specimens recovered this season. In burials 51, 68, 141, and 144 the medallion lay in front of and close to the pelvis, and in burial 135 it was close to and in front of the shoulder. The remaining five graves were either disturbed, or for some other reason it was impossible to determine the position of the ornament with accuracy. All, with two exceptions, are made of very thin silver, and as a result they are in the majority of cases in a very bad state of preservation. As the designs are practically identical with those of last year's specimens, it has not been thought necessary to illustrate any more examples than the two finest, which appear in the groups of objects from burials 51 and 135 in Plate XLIII, Nos. 9 and 10.

The following brief description of the medallions found this season is given for reference:—

Burial 42. Diameter 4.50 cm and thickness .50 millimetre. Boss in centre 1.90 cm in diameter, encircled by three raised rings, space between rings being filled up with radial lines. Metal turned over around edge to stiffen the medallion. A number of holes 2.50 mm in diameter roughly punched on each side near the edge for sewing to garment (Reg. No. 1608; Baghdad).

Burial 51. Diameter 7.90 cm, 3 mm thick at edge and 11 mm thick at centre. Boss in centre 2.80 cm in diameter stands 8.50 mm high. The ornament is entirely of filigree held together by rings of wire, and the boss is soldered to the centre of it. The workmanship of this medallion is extremely regular and quite equal to the modern silver work of the East. In this ornament the usual holes on each side are lacking; but, as it is of filigree work, there would be no difficulty in sewing it to a garment (Plate XLIII, No. 8. Reg. No. 1898; Field).

Burial 68. Diameter 4.40 centimetres. Circular boss in centre encircled by three circular ridges separated from one another by shallow depressions. Between the outer ridge and the next are a series of small holes for sewing to the garment (Reg. No. 2050; Oxford).

Burial 104. Diameter 5.50 centimetres. Small raised boss encircled by three circular ridges with radial lines between, roughly incised with an edged tool. Badly broken (Reg. No. 2435; Baghdad).

Burial 120. Diameter 5.60 centimetres. Thickness of metal 1 millimetre. Boss in centre 1.90 cm in diameter, encircled by two raised rings. Edge plain and not bent over. Holes at edge for sewing to the garment (Reg. No. 2538; Oxford).

Burial 121. Diameter 5.50 centimetres. Boss in centre 1.90 cm in diameter, surrounded by three raised rings the outer of which forms a turned-up rim. Series of small holes at edges for sewing to the garment (Reg. No. 2550; Baghdad).

Burial 128. Diameter 4.70 centimetres. Boss in centre 1.80 cm in diameter, surrounded by two slightly raised rings and an outer rim which is slightly turned up. Usual holes for sewing (Reg. No. 2642; Oxford).

Burial 135. Diameter 3.30 cm, thickness 3 millimetres. Made in filigree. Small aperture in centre surrounded by wire ring, encircled by radii of short wires, another wire ring, then more radii until the edge is reached, which is bounded by a third wire ring (Plate XLIII, No. 9. Reg. No. 2723; Oxford).

Burial 141. Diameter 6.10 centimetres. Boss in centre 1.90 cm in diameter, surrounded by four bands. Usual holes for sewing (Reg. No. 2812; Baghdad).

Burial 144. Diameter 5.70 centimetres. Boss 2.50 cm in diameter, encircled by three rings. Thickness of outer rim 2 millimetres. Usual holes for sewing (Reg. No. 2845; Baghdad).

In all these ornaments, with the exception of those from burials 51 and 135, the designs are repoussé from the back. The strange agreement in the diameter of the bosses in four of the medallions is difficult to account for, unless they were made by the same workman, who perhaps used a round-ended tool in making the bosses. The similarity of design between the specimens recovered this season and those of last season is also noticeable, the sole variation being the size of the medallion and the widths between the circular lines around the boss in the centre. It is interesting to see filigree work of so very early a date, and it would be gratifying to be able to trace the country of origin. As India is now proved to have had direct or indirect connections with Mesopotamia in ancient times, the former country may have introduced this art to the Sumerians. India, especially in the north, is known at the present day for the skill of its silversmiths, among whom filigree work has reached its zenith. This technique is also still practised to a small degree in Mesopotamia, and even in Syria, which country probably borrowed the art from Mesopotamia. In Egypt the art has never been much practised either in ancient or more recent times, and the popularity of filigree work, except in the case of Syria, seems to be confined to the middle East. There is no doubt also that the medallions which have been repoussé out of sheet silver are direct copies or survivals of filigree work. The radial lines are quite evidently copied from the radial wires in the filigree specimens illustrated in Plate XLIII, Figs. 8-9, and the slightly raised ridges encircling the central boss obviously represent the round wire rings that held the radial wires in place.

FILLETS Plates XLIII, No. 9 and LIX, Figs. 3-4, 8-9

Silver or copper fillets were found in ten burials. In the undisturbed burials the fillet was always found round the brow, and it seems to have been worn over a linen head-covering; for the silver fillet found in burial 127 bears on its inside the well-preserved impression of neatly woven linen fabric. This ornament appears to have been worn occasionally by men as well as by women; for the bones in

burial 134 which were in especially good condition have been pronounced by Rice to be those of a male. Again, two silver fillets found in burials 135 and 136 are associated with adze-shaped battle axes or daggers, which are most unlikely objects to be found in women's graves.

The fillets illustrated in Plate LIX are briefly as follows:

Fig. 3; burial 127. Silver. Length 15.40 centimetres. Width of centre 1.90 centimetres. Width at ends 11 centimetres. Hole at either end for attaching to headgear or for cord. Roughly made and extremely thin (Reg. No. 2613; Field).

Fig. 4; burial 122. Copper. Length about 14.30 centimetres. Width at centre 28.50 centimetres. Width at ends 7 millimetres. Rough holes at either end for fastening around head. Roughly made and thin (Reg. No. 2562; Field).

Fig. 8. Two silver fillets were found in grave 134 both of which are illustrated. One is 10.50 cm long, and the other 7.20 centimetres. Both are irregularly cut from thin sheet silver, and have small holes at their ends to be fastened to the headgear or with a cord (Reg. No. 2696; Field).

Fig. 9; burial 100. Silver. Of unusual pattern, as it is made of round wire, 2 mm in diameter, with each end turned over to form a hook (Reg. No. 2406; Oxford).

In the upper portion of the illustration of objects from burial 135 (Plate XLIII, No. 9) there is an interesting silver fillet measuring 8.50 mm in width. Its exact length is uncertain, as not all the pieces of it were found. The ends of this fillet were secured to a cord passing round the back of the neck by bending over the four corners at either end to form a kind of tube (Reg. No. 2717; Oxford).

Fillets were found in other burials, though not illustrated, and are as follows:

Burial 77. Silver. Length about 10 centimetres. Width at centre 1.40 centimetres. Hole at each end. The edges of this fillet are embossed from the inside to stiffen it (Reg. No. 2159). A fillet similarly embossed was found last season in burial 21, and is illustrated in No. 1 of this volume.

Burial 87. Copper. Length could not be determined; width 2 centimetres. Made of a very thin strip (Reg. No. 2248).

Burial 93. Silver. Width 1.20 centimetres. Its length, owing to its very bad condition, could not be measured (Reg. No. 2321).

Burial 136. Silver. No accurate measurements possible owing to extremely fragile condition (Reg. No. 2746).

From the very rough workmanship of these fillets it would seem that they were used for supporting the hair in some way without being exposed to view. The expenditure of a little more trouble on finishing these fillets would have made them presentable ornaments. They were perhaps used for stiffening purposes by concealing them in some material such as linen.

EAR-RINGS Plates XLIII, Nos. 8-9 and LIX, Figs. 25-27

Ear-rings were the rule in male, female, and children's graves, one being found as a rule at or close to each ear. In burials 104 and 113, three ear-rings were found, two on the left and one on the right ear. In graves 40, 55, 78, 87, 97,

133, and 134 only one ear-ring was found. Of these, 55 and 134 were disturbed burials, and the absence of a second ear-ring is therefore intelligible. In the remaining burials, the ring was found on the right ear. With two exceptions in each case, the ear-rings found in the graves consist of two types. The more common type is silver or copper wire ranging from 2 to 3 mm in diameter, which has been twisted two or three times around a mandrel, as shown in Plate LIX, Fig. 25. The second type is of slightly thicker wire made into a single coil with overlapping flattened ends, as, for example, Fig. 26 of the same plate. One of the exceptions is the pair of ear-rings, found in burial 75, that are made of thin silver wire of which one end only had been flattened out. The other exceptional form of ear-ring, which almost certainly came from, although it was not actually found in a grave, is illustrated in Plate LIX, Fig. 27. It is of silver wire, 3.50 mm in diameter, with the ends twisted securely round one another.

Ear-rings are made of gold, silver, and copper, but those made of gold are extremely rare (this may of course be due to pillaging). They have been found, up to the present, in only two graves (51 and 129). The ear-rings from grave 51 are illustrated, with the other articles of jewellery with which they were found, in Plate XLIII, No. 8. Those from burial 129 are identical in pattern, though of lighter weight (Reg. No. 2654; Baghdad). The ear-rings photographed are made of wire 2 mm in diameter with each of the overlapping ends flattened out to a breadth of 4 millimetres. They measure 12.50 mm in diameter, and show signs of the hammer, used to fashion them, all over their surfaces (Reg. No. 1895; Field). On the whole, silver was more generally used for ear-rings than copper, the latter being more generally found in children's graves. In burials 52, 83, 130, and 137, a silver ear-ring was found by one ear, and a copper one by the other; in burial 113 a silver and a copper ring were found lying by the right ear, and a single copper one by the left. In two graves (135 and 139) the ear-rings were not found by the ears. These were both undisturbed burials, and the ornaments could not therefore have been accidentally shifted. In burial 130 they were found in a jar close to the head, and in 139 they lay behind the head loose in the soil.

BRACELETS Plates XLIII, No. 9 and LIX, Figs. 22-23

Bracelets were found in ten graves. A single specimen was found in each of graves 43, 67, and 92 around the left wrist. In grave 93 there were two on the left arm and one on the right. In the remaining graves, which were all undisturbed, a single bracelet was found on each wrist. These bracelets are all made of copper wire ranging from 2.50 to 6 mm in diameter, but mostly about 3 mm thick. The pattern is severely plain, for the piece of wire is simply bent round until the ends nearly or just touch. The bracelet illustrated in Plate LIX, Fig. 23, is most unusual; it is made of two pieces of flat wire of equal length whose ends are twisted over one another as opposite sides. This bracelet was found with a plain wire bangle on the left wrist of burial 93 (Reg. No. 2308; Field). Bead bracelets were found on the left wrists of the occupants of burials 43 and 67, the only two instances of any material other than copper being used for this purpose.

The bracelet in burial 43 consisted of four large beads made of shell, carnelian, lapis lazuli, and quartz (Reg. No. 1627; Field). In burial 67 the bracelet is made up of three beads—agate, lapis lazuli, and glaze. On the same cord with these beads there was a cylinder seal of shell (Reg. No. 2041; Baghdad).

FINGER-RINGS

Silver finger-rings were found in seven graves, in most cases still adhering to the phalanges, though when the hands were close together it was impossible to determine to which hand the ring belonged. In none of these graves, two of which belonged to children, were there any objects that would definitely show them to be either male or female, nor was it possible to determine the sex from the bones. In graves 48, 81, 117, 123, and 141, only a single ring was found, but no less than three were found in each of graves 52 and 139. These finger-rings are of two types. They are made of either thin strips of silver, from 1 to 1.50 cm in width, with simple overlapping edges, or round silver wire, varying from 2 to 2.50 mm in thickness, wound in from one to three coils. Wire rings were found in graves 48, 81, and 123, and flat rings in graves 139 and 141. The two varieties occurred together in burials 52 and 217. Three rings were found in burial 74; they are made by grinding down a conical shell. Their external diameter is 2.20 cm, and their internal diameter 1.60 centimetres. These rings lay in front of the face in such a position that they might equally well have been hair ornaments or finger-rings (Reg. No. 2139; Baghdad). Very similar rings to these are illustrated in Plate LIX, Fig. 12. Many such were found in the mound, but their exact use remains undetermined.

NOSE ORNAMENTS Plate LIX, Figs. 24 and 28A

Three objects which appear to be nose ornaments were found in graves 63, 100, and 128; two of them are illustrated. Fig. 24 shows two small silver studs of dumb-bell shape which closely resemble in every way the nose ornaments worn by small children in the East at the present time, one being carried on either side of the nose. The burial (100) in which these studs were found was in a badly disturbed state, but the bones showed that the skeleton was that of a child of about nine years of age (Reg. No. 2409; Field). Fig. 28A is made of bone, and measures 3.40 cm in length. It is pointed at either end, and in the middle has a narrow section 5 mm long. This also was found in a badly disturbed grave, and its exact position therefore could not be determined. From its shape and the fact that it could hardly have been used for anything else there is a reason to think that it was an ornament intended to be inserted in the septum of the nose. The dagger found in the burial indicates that it belonged to a male (Reg. No. 2650; Baghdad). The remaining nose ornament, a silver ring 1.50 cm in diameter, made of round wire with slightly overlapping ends, was found in burial 63. It fortunately was found in an undisturbed grave and so close to the mouth as to warrant the assumption that it was once worn in the nose. The objects found in this burial gave no clue to the sex of the burial, but it may well have been that of a woman (Reg. No. 1999; Baghdad).

CHAINS Plate XLIII, Nos. 3 and 5

The gold chain (Reg. No. 1908; Baghdad) illustrated in No. 3 is a very fortunate find. It is 18.70 cm long and 5 mm thick, and is built up of wire links of such a form as to make the chain square in section. The wire of which the links are made is slightly over 1 mm in diameter and uniform in thickness. On examination under a magnifying glass the wire showed the characteristic longitudinal grooving associated with drawn wire, and this find therefore represents the first recorded example of drawn wire dated about 3000 B.C. Gold wire was made by hammering up to a very late date in Egypt, which is curious, for a soft metal like gold could be readily drawn through a carnelian bead as was probably done in Babylonia. This chain was found at a level of 105 cm below the surface of the ground, adhering closely to and inside a large lump of mud.

At the time of its discovery there was therefore no exact means of dating it. Soon after its discovery, however, the fragments of a silver chain of similar form were found in burial 93 (Reg. No. 2304; Baghdad). A section of this latter chain is shown in No. 5 beneath the illustration of the gold chain. The two chains are of exactly the same workmanship and about the same thickness. The silver chain, unfortunately, is very badly corroded, and the spaces between the wire links are filled up with chloride. Owing to this corrosion it is impossible to say exactly how the wire of the links was made, but there is no reason to think that the method was other than that of drawing.

BEADS AND NECKLACES Plates XLIII, Nos. 6, 8-9 and LX, Figs. 1-61

Necklaces of beads were found in most of the burials, whether male, female, or children. These vary from a couple of beads strung on a cord to one or more elaborate strings of beads. The materials from which the beads are made are not very numerous, lapis lazuli easily coming first, followed by carnelian and glaze. In the following list are given the numbers of the graves in which beads of the various materials were found.

Lapis-lazuli beads	} Practically in every burial
Carnelian beads	
Glazed beads	

Ornamented carnelian beads	75, 80, 82, 83, 88, 93, 104, 120, 121, 130, 135
Shell beads	43, 39, 42, 80, 92, 120, 134, 140, 142
Gold beads	51, 63, 120, 135
Silver beads	93, 135, 139
Copper beads	77, 78
Crystal beads	128, 135
Onyx beads	93, 120, 135
Jasper beads	64, 77
Porphyry beads	43, 104
Quartz beads	43
Agate beads	63
Haematite beads	40
Bone beads	97

In these graves in the majority of cases only a single bead or at the most three or four of any of the materials other than lapis lazuli, carnelian, or glaze were found in a necklace, showing that the stones were for some reason

difficult to obtain or else were seldom used. One would have thought that Sumer would have eagerly traded with Elam or the highlands to the north for minerals to make articles of adornment. Such, however, seems not to have been the case; and this, in my opinion, is another proof that the Sumerians of that period were not used to the manufacture of beads and that the carnelian and lapis-lazuli beads, though common, were not made in that country.

Lapis-lazuli beads are rarely well made, and compare very unfavorably in technique with the carnelian beads. The two finest that have been found are shown in Plate LX, Figs. 18-19. Of these one is 6.90 cm long, 7 mm in diameter in the middle and 4.50 mm at the ends, and the second is a little longer. Neither of these beads, which were found by themselves in burial 107, is truly round, and they were bored from both ends (Reg. No. 2401; Field). Other lapis-lazuli beads are long, barrel-shaped beads with faceted sides, as shown in No. 28 and again in No. 34 of Plate LX (Reg. No. 2306; Baghdad), which is an octagonal bead. Hexagonal beads are also known. A very common shape for lapis-lazuli beads is that shown in Fig. 14 of Plate LX, but considerably smaller in size. A longer variety similar to 42 also occurs. Lapis beads of globular shape with fluted sides are not unknown, as will be seen in Figs. 12, 15, and 27 of Plate LX. Of these 12 and 15 are the only two lapis beads found of this variety with a number of fine beads of other materials in burial 76. Fig. 27 comes from burial 80, and is the only one of its kind among the few beads found in this grave. Cylinder beads of lapis lazuli are rare. They occur in graves 42 and 43, and both are roughly made. Fig. 17, which is a flat diamond-shaped bead, roughly cut and finished, was found in burial 43. A very similar bead to this one was found in burial 104. Spherical beads, or rather what were intended to be spherical beads, are fairly common; there is one specimen at least in most of the strings of beads.

Lapis lazuli was frequently used for dividers; that is, large beads of this material were perforated with two or more holes, through which were passed the separate strings on which smaller beads were threaded. These dividers are illustrated in Plate LX, Figs. 25, 26, 30-32, 37, 38, 44, etc., and some are shown in Plate XLIII. These dividers are very roughly cut and left unfinished, and lapis is the only stone used for this purpose, with the exception of two dividers made of shell, neither of which was found in a burial. Fig. 31 comes from burial 51 and measures 2.30 x 2.10 cm, being 7 mm thick. It is perforated with two holes and ornamented with rough grooving on either side. Fig. 44 (also in Plate XLIII, No. 6, Fig. 4) comes from burial 93, and measures 2.40 x 1.80 cm, being 13 mm thick. It is ornamented back and front with four scored lines. Roughly cut pieces of lapis lazuli were also used as pendants, some of which are shown in Plate XLIII, No. 6, others in Plate LX, Figs. 16, 52-53. Frog, fly, beetle and shell-shaped amulets were cut exclusively in lapis lazuli (Plate LX, Figs. 3, 4, 60-61). Both the shells (3 and 4) come from burial 117, and are well-cut imitations. Frog amulets are rare, one specimen only being found in each of burials 59 and 100, and two specimens in burial 63 (Reg. Nos. of strings 1980; Baghdad. 2409; Baghdad. 1998; Field). The fly amulet (60) from burial 88 is the only one found (Reg. No. 2262; Baghdad). Figs. 50 and 61, both of lapis lazuli, apparently

represent beetles; of these the first was found in burial 63, and the second in an unrecorded grave (Reg. No. 1998; Field. 2196; Baghdad). Both were used as dividers, the latter bead being pierced with four small holes.

Carnelian beads are plentiful and almost invariably well-finished—a point which will be referred to below in this chapter. A favorite shape for carnelian beads is the long one shown on either side of the decorated bead in Plate XLIII, No. 9. These beads, 5.50 and 4.90 cm in length, are beautifully made and finished. The boring of their holes, which was performed from both ends, is extremely well done (Reg. No. 2719; Oxford). Similar beads were found in burial 51 (Plate XLIII, No. 8. Reg. No. 1896; Field). They also occur in necklaces from other burials, but the larger ones are on the whole rather rare, and are only to be found in the more important graves. The most usual form of carnelian bead is the barrel shape illustrated in Fig. 42 of Plate LX. This is a very favorite form for beads whether made of lapis lazuli, carnelian or glaze. Carnelian beads are often disk-shaped with a sharp ridge round the centre, specimens of which can be seen in the smaller string in Plate XLIII, No. 8. This shape also occurs in lapis lazuli and glaze. A very fine carnelian bead from burial 42 is Fig. 29 of Plate LX. It is 1.70 cm long, 7 mm in diameter, and six-sided, with the facets axial and well-cut. Another unusual carnelian bead found in burial 140 is four-sided with the angles nicely bevelled off (Reg. No. 1612; Field. 2797; Baghdad).

GLAZED BEADS

Glazed beads were very plentiful in the "A" cemetery. They are cylindrical, spherical, long or short barrel-shaped, and disk-shaped. Globular beads are also known, but very rare. They are made of a white composition resembling gypsum covered with a glassy coat, which is either white, black, or brownish in color. The white glaze was probably once green or blue, and has lost its color, but the black glaze needs further examination before any opinion can be hazarded. A rare form of glazed bead, found in burial 75, has fluted sides (Plates LX, Fig. 23 and XLIII, No. 6, Fig. 3. Reg. No. 2136; Baghdad). Another rare example, from burial 80, is No. 64, whose surface is ornamented with minute bosses (Reg. No. 2189; Baghdad). A long rectangular bead in glazed paste slightly tapering toward the ends was found in burial 127. It is about 10.50 cm long, 15 cm wide in the centre and 1 cm wide at the ends, but these measurements cannot be regarded as strictly accurate, for the bead was in a very friable state. It seems to have formed the centrepiece of the necklace. The necklaces in some of the burials were made up of hundreds of small disk-shaped, glazed beads, but owing to their fragility very few could be collected for they broke up directly they were touched. They seem to have formed a second string of beads in many of the graves, where beads of more durable materials were found.

DECORATED CARNELIAN BEADS

These are extremely interesting beads from a technical point of view. Though found in many necklaces, they were of sufficient rarity to allow of only one or two examples being included in each. These carnelian beads are decorated

in a curious manner, the designs always of a simple geometric form, being traced in white on the red ground. In the illustrations of these beads in Plate LX, Figs. 54, 50, 62, 63, 56-58, these designs for the sake of clearness are shown in black, whereas in reality they are white on a red ground. Bearing in mind that India has been from time immemorial a home of carnelian working, I turned to that country as being a possible source of these decorated carnelian beads and sent a sample to Sir John Marshall, Director General of Archaeology in India, for his observations; he informed me that similar beads have been found in great quantities in India, dating from early to comparatively recent times. To use Sir John Marshall's own words, "Many thousands of such beads have been found in excavations of Greek, Scythic, Parthian, and Kushan sites throughout the north-west of India and in many other sites of Hindustan. They also occur in the prehistoric burials of southern India." The process used in decorating these beads is extremely interesting. For the following description I am indebted to Mr. Andrews of the Central Asian Antiquities Museum at Delhi: "The lines have the characteristic quality of a brush or pen line, and yet the opacity of the line extends to varying depths below the surface in different specimens. They are produced by calcination of the surface by the following or some similar process. Coat the carnelian with a layer of carbonate of soda, then place on a red-hot iron. The depth of the white layer depends on the length of calcination. Next stop out the parts not wished to be opaque with a cement containing oxide of iron. Re-submit to heat, when the stopped-out parts will recover their lost color."

The brush work and the depth of opacity in examples from the Kish burials agree in every way with the observations made on the Indian beads by Mr. Andrews, though I do not know as yet whether the designs agree. There can be no doubt that beads of the same technique came from places as far apart as Mesopotamia and India. The question now arises as to the country of origin. The fact that decorated carnelian beads are found in quantity and at all periods in India and but sparsely over a limited period at Kish must prove that India was either the country of origin or that a third country, which had easy trade relations with India and more difficult ones with Babylonia, manufactured these beads. In view of the long interval of time during which these beads were buried with the dead of that country I am inclined to think that India was the original home of their manufacture.

It was pointed out in No. 1 of this volume that a great difference exists between the finish of the lapis-lazuli and carnelian beads found in the graves at Kish. Those of lapis lazuli—a considerably softer stone—are generally badly cut, badly shaped, and show little attempt at polish. The carnelian beads, on the contrary, are well made and beautifully finished. It would seem, therefore, that the two kinds of beads were not worked by the same people, for in that case the same finish and, more important still, the same shape might be expected. This suggests that neither variety of bead was made in Babylonia. There is also the possibility that neither stone was worked in that country, but that each had a separate country of origin. I would regard Persia as the source of the lapis beads.

Decorated carnelian beads are unknown in Egypt, and up to the present have been found in graves of only one period in Mesopotamia. Specimens have been seen in Syria in the hands of dealers, but there is every probability that they originally came from Mesopotamia. Though Kish is the only site in Mesopotamia where these beads have been found, there is no reason to think that they will not eventually be discovered farther south when other excavations are made. If they should occur more plentifully in the south of Mesopotamia than they do at Kish, there will indeed be reason to assume that they came there from India.

Fig. 54 of Plate LX (also in Plate XLIII, No. 9) comes from burial 135. It is a large bead measuring 2.50 cm by 2.20 cm, about 7 mm thick. It is well made, and the design, identical on both sides, has been carefully drawn (Reg. No. 2719; Oxford). Fig. 55 was found in burial 93; it was broken anciently. The design is also the same on both sides. It formed one of the beads of string Fig. 4 in Plate XLIII, No. 6 (Reg. No. 2306B; Baghdad). Figs. 43 and 56, both of the same design, were found in burials 82 and 51 (Reg. No. 2700; Baghdad. 1896; Field). The favorite design for these beads is as in Figs. 57, 58, and 63 (also in Figs. 4, 5, and 8 of Plate XLIII, No. 6). These strings of beads come from burials 93 and 80 (Reg. Nos. (4), 2306B; Baghdad. (5), 2189; Baghdad. (8), 2306A; Baghdad).

SHELL BEADS

These on the whole are somewhat scarce. Shell beads of a curious shape, as shown in Plate LX, Figs. 39-40, were found in burials 43 and 80. They are rectangular in shape and rhomboidal in section. Their knife-like edges are roughly notched. Three examples found in burial 43 average 12 mm in length and 7 mm in width, being 2.50 mm thick in the middle (Reg. Nos. 1626; Baghdad. 2189; Baghdad). Another interesting shell bead is Fig. 41. This was not found in a grave, but is clearly of the same period. It is made up of two cylindrical portions and measures 2.50 x 1.70 centimetres. The two sides of the bead are alike. Its curved edges are ornamented with deep incised lines. The hollow in the centre of each cylinder was inset with pieces of lapis lazuli, but of the original four pieces of lapis only two remain. Two holes through the bead allow of its serving as a divider (Reg. No. 2364; Field). Fig. 43 was found in burial 134. It too is in the form of two cylinders joined together, with a geometrical decoration on both sides. That it was intended to inlay it with lapis lazuli is proved by the four small holes on each side (Reg. No. 2700; Baghdad). Actual shells were used as beads in only two graves (133 and 142). These are gastropod shells and small in size (Reg. No. 2686; Baghdad. 2831; Field). Dentalium shells served as beads in burial 39, and one is illustrated in Plate LX, Fig. 47 (Reg. No. 1567; Field). Though many of these latter were picked up on the surface of the mound at "A" and on an adjoining site, they do not seem to have been very popular with the people who were buried in the "A" cemetery. A new type of shell bead was found in burial 42 (Plate LIX, Fig. 21). This was a circular plaque of shell, 1.80 cm in diameter and 2 mm thick, with a roughly cut hole in its centre, 6 mm in diameter (Reg. No. 1612; Field). In grave 43 there was a long shell bead of cylindrical form, 3.7 cm long and 1 cm in diameter—the only one of

its kind found. A shell pendant from burial 140 is shown in Plate XLII, No. 16. This is in the form of a bird with wings outstretched. It measures 3 cm across, and is a little over 3 cm thick. One side is white, and the other red (Reg. No. 2797; Baghdad). Shell pendants found on the mound, but presumably coming from graves are shown in Plate LX, Figs. 8 and 11. They are cut from thin pieces of mother-of-pearl (Reg. Nos. 1569 and 844; Baghdad).

GOLD BEADS

Gold beads were rarely found in the burials, but this may possibly be solely due to robbery. The finest gold beads were in burial 51 (reproduced in Plate XLIII, No. 8). These two beads were originally of the same shape as the fine carnelian beads with which they were found, but they had been squeezed flat by the pressure of the earth. They are 4.90 cm long, and are made of fine, thin gold. They were perhaps wrapped around a wooden core which has now disappeared. The joining of the edges is still evident in both of these beads; they were merely overlapped and pressed together (Reg. No. 1896B; Field). In grave 63 there was a single gold bead of very thin sheet-metal and barrel-shaped in form (Reg. No. 1998; Field). Two gold beads from burial 120 are spherical in form and about 12 mm in diameter (Reg. No. 2719; Oxford). In grave 120 two globular gold beads and one disk-shaped are made of very thin gold foil (Reg. No. 2542; Baghdad). Fig. 42 of Plate LX is a gold bead found in the mound outside a burial. It is 2 cm long and 8 mm wide in the middle. The thickness of the metal is about a half millimetre. There is no sign of any real join or soldering. Its surface is slightly faceted here and there, as if the gold had been beaten over a core of bitumen which was then removed by heat (Reg. No. 1597; Field).

SILVER BEADS

Two silver beads were found in burial 93, both in very bad condition. One of these is globular in shape, 12.50 mm in diameter, and has a small silver tube inside it evidently intended to prevent accidental cutting of the thread by the sharp edges of the hole. The second bead is a divider made by doubling over a piece of silver, leaving spaces for two threads between the halves. It measures 2.20 x 1.50 cm, and is 3 mm thick (Reg. No. 2306; Baghdad). A silver divider found in burial 139 is 1.75 cm long, 1.90 cm wide, and 3.50 mm thick. It is rectangular in shape and made of two sheets of silver united together, but corrosion prevents us from knowing how it is done. Four holes formed by grooving the pieces of silver before they were united together allowed the threads of the necklace to pass through (Reg. No. 2794; Field). Burial 135 contained a bitumen bead of barrel-shape covered with a thin sheet of silver, now in a very badly corroded state (Reg. No. 2719; Oxford).

COPPER BEADS

In burial 78 there was a copper divider (Plate LX, Fig. 44) of the same type as the silver divider just described. It has three ribs on either face and four holes

for the thread to pass through (Reg. No. 2306; Baghdad). Fig. 24 of Plate LX shows a copper bead from burial 77, of barrel-cylinder shape. The hole that once ran through is now completely filled with incrustation (Reg. No. 2163; Baghdad).

CRYSTAL BEADS

The crystal bead found among others in burial 135 is disk-shaped and measures 16 mm in diameter (Reg. No. 2719; Oxford). That in burial 128 is lozenge-shaped with a diagonal hole for the thread (Reg. No. 2649; Baghdad).

ONYX BEADS

Only three onyx beads were found in graves 93, 120, and 135. The large bead from burial 93 (Fig. 1 of Plate LX) is a fine piece of stone with irregular dark edging and a dark spot in the centre. It is bored from both sides and, though the two borings meet in the centre of the stone, they do not form a straight line. This stone was threaded on silver wire, a portion of which still remains in it. The holes at either end are 3 mm in diameter, and narrow to about 2 mm in the centre. The tool employed did its work so cleanly that the point of a needle meets no roughness on being passed along the hole. This bead measures 4.95 x 3.70 cm, and is 9 mm thick. It is also illustrated in Fig. 7 of Plate XLIII, No. 6 (Reg. No. 2305; Baghdad). Fig. 2 of the same plate was found in burial 135. It too is a flat piece of stone, measuring 4.60 x 3.10 cm, and is slightly oval in section. In this case the boring is not so successful, with the result that the two holes do not join up properly. This stone was also threaded in silver wire, a large portion of which still remains inside the hole (see also Plate XLIII, No. 9. Reg. No. 2722; Oxford). Both these beads, though a little out of shape, are beautifully polished, and were evidently much valued. The third bead (Plate LX, Fig. 33) is roughly cut, 3 cm long, 1.70 cm wide, 7 mm thick, and is oval in section. It was found in burial 120 (Reg. No. 2542; Baghdad).

JASPER BEADS

Only two jasper beads were found in burials 64 and 77. In both cases the color is red, and both are disk-shaped; the one from burial 64 is unfinished, being made by roughly rounding off the corners of a square piece of stone (Reg. No. 2004; Baghdad. 2163; Baghdad).

PORPHYRY BEADS

A bead of this material, short and cylindrical in shape, was found with three beads in burial 43 (Reg. No. 1626; Baghdad). Another bead of this material from burial 104 is rhomboidal in shape measuring 2.25 cm from top to bottom (Reg. No. 2436; Baghdad).

QUARTZ BEADS

A bead of blue quartz formed part of a bracelet on the left wrist of the occupant of burial 43. This bead is cylindrical in shape, 2.30 cm long, 8 mm in diameter, and is somewhat roughly made (Reg. No. 1627; Field).

AGATE BEADS

An agate bead, very roughly made and disk shaped, was found in burial 63 (Reg. No. 1998; Field).

HAEMATITE BEADS

Haematite is represented by a single bead in burial 40, of disk shape, 7.50 mm in diameter and 3.50 mm thick. Only five beads in all were found in this grave (Reg. No. 1578; Field).

BONE BEADS

A bone bead of long barrel cylinder form (6.70 cm long) was found with a glazed bead in burial 97, there being only these two beads in this child burial (Reg. No. 2335; Baghdad). Figs. 20-21 of Plate LX are of similar shape and material, and probably belonged to a burial which had been disturbed or denuded. It appears from this list that, with the exception of lapis lazuli, carnelian, and glaze, the Sumerian of the period of the "A" cemetery was very poorly equipped with beads. The striking absence of stone beads, with the exception of lapis lazuli and carnelian, implies that Kish occupied a somewhat isolated position which the history of the period tends to bear out. The contrast between the Sumerian beads and the beads of the Neo-Babylonian period at Kish is very marked. During the latter period, finely made beads of almost every stone suitable for decoration were plentiful in female graves.

CYLINDER SEALS

No less than 91 cylinder seals were found in mound "A," in the course of this season's work. They are made of the following materials: shell and lapis lazuli (1), serpentine (1), silver (1), calcite (4), bituminous limestone (2), glaze (4), limestone (6), lapis lazuli (10), and shell (61). The great popularity of shell as a material for cylinder seals was not confined to Kish; it was obtained in other sites in Babylonia. All these seals belong to a single period, namely the time of Eannatum, about 3000 B.C. This date is substantiated by the close resemblance between the objects found with them and the objects from Lagash which are dated in the time of Eannatum II. Similar objects were also discovered in the lower levels at Assur. Out of the total number found, only 68 seals were actually taken from recorded graves; the remainder were scattered in the debris covering the mound. As not one of the seals was found on the surface of the mound, we must conclude that they belonged either to disturbed graves, or were dropped by the people who inhabited the mound at the time when portions of it were being used as a cemetery. The evidence of the seals themselves, their workmanship, and the subjects cut upon them alone prove that they are of very early date.

In the majority of the graves only one seal was found. In eleven burials there were two seals (burials 42, 51, 56, 70, 82, 90, 93, 128, 134, 135, 144); in four, no less than three (burials 69, 77, 104, 107), and in one grave, four seals (117). There were seals in both male and female burials and two were discovered in the burials of children (graves 65 and 100). These last were appropriately very small, one being only 1.50 mm long and 8 mm in diameter, the other 1.65 by 10 millimetres. The two cylinder seals in burial 135, which was very rich in objects, are both unusual. Through one made of shell (2.60 x 1.25 cm), an especially large hole was drilled into whose ends are fitted small conical plugs of lapis lazuli. A small, neat hole was then drilled through these plugs to take the wire or cord on which the seal was carried. The scene carved upon this seal is shown in Plate XLII, Fig. 3, and the seal itself in Plate XLIII, No. 9. The second seal is made of thin silver with a core of some bituminous substance, which unfortunately is in too bad a condition for the design upon it to be made out. It is 2.30 cm long by 1.20 cm in diameter, and is illustrated in Plate XLIII, No. 9. Metal seals of any date are exceedingly rare, and fortunately this dated example has been found.

The state of preservation of the seals varies extraordinarily. The best preserved are made of the harder stones, such as lapis lazuli and rock-crystal. Shell, though a very durable substance, suffers badly from the action of salt, and the poor state of preservation of some of the shell cylinders may be ascribed to their having been placed close to the viscera of the deceased. Cylinder seals seem to have been worn either on the left wrist or hanging from the waist, and very small seals were sometimes worn on the necklace with other beads. In burials 56, 77, and 93, in each of which two seals were found, one lay close to the pelvis, and the other close by the wrist or neck. This suggests that seals were not always carried

together. It is unlikely that two seals would be in use at the same time, but as all were probably important, they were doubtless carried on the person for safety, and may also have served the purpose of identification. Even at the present day, seals are carried on the person in most parts of the East, and care is taken that they do not get into the hands of those who might use them unlawfully.

Some of the seals are divided into two registers by one or two fine lines. The upper and lower designs are always dissimilar, except in those seals which have a single geometric design as in Plate XLI, Figs. 11-12. Seven such seals were found, but mostly too worn to be illustrated (burials 67, 87, 107, 131, 144. Reg. Nos. 1973, 2038, 2249, 2400B, 2116, 2674, 2850B). In eleven seals a blank space was left in the designs, presumably for a name or an emblem as in Plate XLI, Figs. 3-4 (burials 55, 62, 77, 107, 117, 128, 134, 135, 146. Seals 1953, 1987, 2162A, 2399, 2509D, 2558, 2567, 2648, 2697B, 2718, 2883). It would seem that the seal-maker was accustomed to leave vacant spaces to be filled in accordance with the requirements of his clients. Seal-cutting was doubtless in the hands of quite a few men, and in those cases in which a space was left for the client's name the designs engraved upon them were probably mostly stock designs. The better class Sumerian, however, probably ordered his own design, and an example of such a seal is seen in Plate XLI, Fig. 8. This seal is exceptionally well cut and finished. It bears an inscription in archaic characters, which Professor S. Langdon reads as meaning, "the property of l-Tl-Dar, the Chief Minister." This seal was found just above the footing of chamber 25 into which it had been washed with some mud from a denuded grave.

Animals are depicted in most of the seals. The lion is very common, two males usually being shown. The antelopes are of several varieties. Some have long horns curving over the back as in Plate XLI, Fig. 1. Others have short horns as in Fig. 2 of the same plate, and in others again the horns take the shape of a lyre (Plate XLI, Fig. 8). In seals 2116 and 2509B, the stag is shown, and an ostrich is figured in seal 2400. The last three seals were in too bad a condition to render good impressions possible. A bull is represented in seals 2558, 2697B, 2432 (Plate XLI, Figs. 4 and 8). In the first seal the animal is represented with a bull's head and long curved horns, but does the animal really represent a bull? It is extraordinarily like the brindled gnu, or West African Bubal with the characteristic wrinkling of the skin on the shoulders. In the other two seals the bull-like body is surmounted with what appears to be a human head with horns. This figure probably represents Gilgamesh, who is sometimes shown wearing horns.

The figure of Gilgamesh, or possibly some other hero, is depicted on several seals; for instance, Nos. 2172, 2195, 2558, 2432, 2501, 2569, 2612 (Plate XLI, Figs. 8, 9, and 17). This figure, which is usually shown wearing a long beard, is never represented in profile. In some of the seals, the hero is shown holding an animal up by the tail or hind feet on either side of him, as in Plate XLI, Fig. 9. The figures of ordinary individuals are very common. In the majority of cases they appear to be herdsman, either nude or wearing short kilts, some of which terminate in a single row of fringes. The people of better class who are depicted on the seals wear a longer skirt.

An interesting feature in nine of the seals is the representation of a scorpion (burials 55, 62, 80, 107, 134. Reg. Nos. 1953, 1987, 2190, 2299, 2399, 2400, 2694, 2697B, 2810). This arthropod always occupies a secondary position, so it is a favorite device for filling up vacant spaces in a seal. It most often occurs just below the vacant name space alluded to above (see Plates XLI, Figs. 2-4, 13 and 15 and XLII, No. 1). In two seals, a lizard occurs (Plates XLI, Fig. 15 and XLII, No. 3), and serves to fill in what would otherwise have been a vacant space. What appears to be a centipede is represented in seal 2399 in Plate XLI, No. 3, between one of the lions and the antelope. The possibility of this object representing a tree or bush must also be considered, especially as seal 2149 has a somewhat similar object in the background. There is apparently an octopus carved on the seal shown in Plate XLI, Fig. 2, just below the representation of a scorpion, and a snake appears on seal 2172 (Plate XLI, Fig. 17).

Fig. 9 in Plate XLI is unique, for the scene is placed the reversed way from the usual—an arrangement found in no other seal to my knowledge. The subject evidently did not permit of its being placed in the usual position. Seals with geometrical designs, instead of the usual mythological or pastoral subjects, are rare. There are only five such seals, three of which are illustrated in Plate XLI, Figs. 10-12. Those not illustrated are fully described at the end of this chapter. We must note, however, that one of the seals (2116) is in two registers, of which the upper one is decorated with a gulloche of two, and the lower one with a mythological subject. All the seals with this type of design are made of stone, the materials being lapis lazuli, limestone, and calcite. Of the subjects most frequently met with, the favorite scene is the representation of two lions with their bodies crossing one another, each attacking an antelope as in Plate XLI, Figs. 3, 13, 16, etc. The antelope thus attacked is always shown looking backward as if for help. This motif occurs on over thirty seals. Whether this motif is to be regarded as an heraldic symbol of Kish is difficult to say, but the idea is very similar to that shown by the early seals from Lagash so many of which show a winged eagle holding an antelope in each claw. This latter scene is also found on eight seals from the burials at Kish. Sometimes it is a stag instead of an antelope that is represented. It may be that in such a scene we have an early representation of falconry. In Mesopotamia and India at the present day, gazelles and antelopes are hunted by falcons which are trained to buffet them with their wings until the hunter or dogs arrive to complete the catch. If this be so, it would account for the frequent presence of a man holding one of the antelopes. In accordance with the usual procedure of archaic art, the falcon would naturally be represented as being of unusual size. The next most popular scene is a series of animals in file facing either to the right or to the left. Sometimes the files are of the same species of animal, or there are alternate kinds, as in Plate XLI, Fig. 1. Eleven seals show this design, in addition to those found last year.

In the richer graves seals of lapis lazuli are not uncommon. These are always considerably smaller than the shell seals, probably owing to the difficulty of obtaining large pieces of lapis lazuli of a uniform blue. Seals made from this stone are always beautifully cut, as befits the material. Seal 17 of Plate XLI is of

especial interest; it was found to have been anciently broken into two pieces longitudinally and so skilfully repaired with bitumen that the repair makes no difference to the impression of the seal. Such repairs in seals are very rare. Many of the seals are very much worn, in some cases to such an extent that it is difficult to see or take an impression from them. This wear is more probably due to the seal being worn on the person for a long time rather than to actual use. The skill with which the figures are arranged on the seals is very noteworthy. Every advantage has been taken of composition, so as to fill up as much space as possible. The arrangement of the animals with their bodies crossing one another is perhaps somewhat monotonous when a number of seals are looked at, but seen separately, the design is quite charming. Perhaps the best designed seal is Fig. 15 of Plate XLI. The skilful way in which the antelopes are placed, facing one another, so as to form with their necks and bodies a frame for another motif, is praiseworthy to a degree. The same may be said in a less degree of No. 8 of the same plate. The fault, if any, in the designs of these seals is the wealth of detail; but this is an archaic trait, and none of it is false.

The seals are all straight-sided cylinders and exceedingly well made. Even those which are indifferently carved are perfectly round and well-shaped. A lathe of some kind must have been used to shape them, for their perfect roundness could hardly have been attained by hand work. The largest shell cylinder seal measures 4.15 by 2 cm; the smallest, 13 by 7 millimetres. Seals made of this material vary greatly, as their size was ruled by the size of the shell from which they were cut. The largest lapis-lazuli seal measures 2.75 by 1.40 cm; and the smallest, 15 mm by 9 millimetres. Those seals which were made from the rarer stones vary greatly in size.

The faience seals are all made of a white porous paste now very soft. In every case the glaze has lost its color, and is now white instead of the blue or green that probably it once was. Most of the glazed seals are in a very bad condition, but, as far as can be ascertained, the glaze was smooth and well applied. These seals must have been carved when the paste was still damp. The material is unsatisfactory for this purpose, hence the small number of glazed seals that have been found in the cemetery.

The type of press seals figured in Plate XLII, No. 5, is not at all common. Nos. 2145 and 2777 were found in rubbish covering the mound, and therefore cannot be exactly dated. The fact, however, that they are of the same period as the burials, or at least some of them, is proved by Nos. 1816 and 2830 being found in burials 46 and 142, respectively. It has always been maintained that these press seals are of an earlier date than the cylinder seals, especially as their designs are always of a very primitive nature. The fact, however, that they are found in graves of the same period as the cylinder seals proves them to be coeval, unless they were re-used during the period of the cemetery.⁵² The seals illustrated are made of limestone and steatite.

The seals found both in burials and separately in the debris around are tabulated on page 194 for easy reference.

PLATE XLI

1. Shell. 13 x 7 mm. A long-horned antelope in front of a lion facing to the left in the impression. Between one of the antelopes and the lion is a shrub-like object. At the top of the seal is a crescent. Burial 68 (Reg. No. 2169; Baghdad).
2. Same. 2.10 x 1.20 cm. Two lions with bodies crossed, each attacking an antelope. At the end of the scene there are a scorpion in the upper register and an object resembling an octopus below. Burial 107 (Reg. No. 2400A; Baghdad).
3. Lapis lazuli. 2.75 x 1.40 cm. Two lions with bodies crossed, each attacking an antelope. An animal which may be a lioness seems to be assisting. A portion of the seal is divided into two registers by a double line. Upper register blank; lower register and bottom occupied by a scorpion. An object that resembles a tree occurs between the lioness(?) and one of the antelopes. Burial 107 (Reg. No. 2399; Baghdad).
4. Same. 2.10 x 1.30 cm. An animal that seems to represent a bull standing on its hind legs holds an antelope on either side of it. One of the antelopes is being attacked by a lion. A portion of the seal is divided into two registers by a double line. Upper register blank; lower register occupied by a scorpion. Burial 134 (Reg. No. 2697B; Baghdad).
5. Limestone. 2.20 x 1.40 cm. A man, seated on a stool, apparently engaged in milking a long-horned antelope. Behind him is another man, dressed in a long-fringed garment, apparently superintending the operation. In the background is an animal at the top which may be a dog. Other objects may represent a dagger and trees. The long festoon-like objects seem to have some analogy with the boat-like objects found on some of the seals found last season. Burial 74 (Reg. No. 2149; Oxford).
6. Shell. 3 x 1.60 cm. This is one of the most interesting seals found in the burials. Upper register: a rectangular object may represent a Ziggurat(?) viewed from the top. On the left, two people dressed in short kilts are apparently adoring it. On the right and left of the Ziggurat(?) are similar figures apparently just about to mount it. Lower register: a man is about to plunge a knife into an animal lying on an altar. To the right are three human figures, the central one seems to be held by the other two. In fair preservation. Burial 7 (Reg. No. 2038; Field).
7. Same. 2.70 x 1.40 cm. A winged eagle holds the tail of an antelope on either side of it, whose head is turned backward. In front of one of the antelopes is the figure of a man dressed in a short kilt with a single fringe and holding one of the antelopes by the horns (Reg. No. 2321; Field).
8. Same. 3.50 x 2.70 cm. This is by far the finest seal found in mound "A" up to the present. The central motif is a human figure represented full face with a head-dress of plumes(?). The figure is nude with the exception of a triple girdle around his loins. A long beard is worn, and the face is shown with apparently three eyes, two in the normal position and one in the middle of the forehead (see Plate XLV, Nos. 1 and 2). The figure is holding two bulls(?), one on each side of him, by what appear to be bridles. The bulls are rearing on their hind legs. Farther to the left is a lion in a similar posture, with his fore paw held by a human figure similar to the one in the central design. The body of this lion crosses the figure of an antelope. The second human figure, as well as holding the first lion, is about to stab another with a dagger held in the left hand. Farther on again, the seal is divided into two registers, the upper part of which is filled in with an inscription of archaic characters. Below this is a minute scene representing a man holding two antelopes by the throat. Unfortunately, this seal did not come from a grave, but was found at the edge of mound "A," just above the footing of chamber 25 of the palace. It had probably been washed out from a burial, and there is no doubt that it belonged to the burial period (Reg. No. 2558; Baghdad).
9. Lapis lazuli. 13 x 9 mm. This seal is unique in that the scene runs down the axis of the seal instead of across it. A figure of a man, full face, holding a dead antelope on either side. Below his feet there is another antelope (Reg. No. 2195; Field).
10. Same. 1.65 x 1 cm. A series of rope-like festoons with indefinite markings above and below them. Burial 100 (Reg. No. 2408; Oxford).
11. Same. 2.30 x .90 cm. Two registers separated by a double line. In each register two double zig-zag lines cross one another chevron-wise. Burial 87 (Reg. No. 2249; Baghdad).

12. Same. 2.20 x .60 cm. Two registers. A double zig-zag line with a spot in the middle of each angle. Burial 144 (Reg. No. 2850B; Field).
13. Shell. 2.20 x 1.25 cm. Two lions with bodies crossed, each attacking an antelope. One of the latter animals is being assisted or held by a man armed with a short stick and dressed in a simple short kilt. A scorpion is carved in the background. Burial 80 (Reg. No. 2190; Field).
14. Same. 1.90 x 1.20 cm. Two lions with bodies crossed, each attacking an antelope. One of the antelopes is on its front legs trying to kick its assailant. A man dressed in a short kilt is aiding one of the antelopes. In the background is an object that looks like a six-pointed star (Reg. No. 2201; Baghdad).
15. Same. 2.90 x 1.65 cm. Scene of two lions attacking antelopes. An animal that looks like a lioness is represented as crossing the body of one of the lions, head downward. Between the heads and shoulders of the two antelopes there is placed a lizard. A scorpion is also represented in the background at the base of the seal (Reg. No. 2385; Baghdad).
16. A single lion attacking a herd of antelope, both adult and young. In the background is a device of four roundels set close together. Roughly carved, but very spirited. Burial 93 (Reg. No. 2312A; Field).
17. Shell. 2.80 x 1.90 cm. Anciently broken and repaired with bitumen. Two lions with bodies crossed. Farther on is a nude human figure struggling with two lions, one on either side. This figure, as in seal 8, has three eyes and decorations of plume round his head. A similar figure occurs in another place on the seal, wearing what seems to be a dagger at the hip, and holding in each hand some kind of implement. In the background is another dagger, a small kid with curving horns, and what seems to be another human figure about to be attacked by a snake (Reg. No. 2172; Oxford).

PLATE XLII

1. Shell. 2.20 x 1.35 cm. A long-horned animal resembling an ibex. To the right of this is a scorpion followed by an animal attacked by another scorpion. At the top is what may be a tree (Reg. No. 2810; Baghdad).
2. Same. 2.15 x 1.20 cm. A man standing between two antelopes that he is holding by the horns. A lion is about to spring upon one of the beasts, who in turn is being attacked by another man armed with a dagger in his left hand and a curved wand-like object in the right. Between this man and one of the antelopes is an object which cannot be identified. Burial 79 (Reg. No. 2180).
3. Shell and lapis lazuli. 2.60 x 1.25 cm. Lions in the usual position attacking antelopes. A part of the seal has been left bare for an inscription. Below this empty space is what might be a lizard. Burial 135 (Reg. No. 2718A; Oxford).
4. Shell. 1.90 x 1 cm. Two figures dressed in long kilts, sitting on stools facing one another. Between them is a jar(?) from which project four long rods or tubes. Two attendants are shown behind one of the figures. This scene has been found before on cylinder seals, and has been explained as representing the sucking of a liquid through a tube. A vacant space in the seal has been filled in with a curved object. Burial 134 (Reg. No. 2697A; Baghdad).

PLATE XLII (Stamp Seals)

5. First seal. Dark steatite, 3.20 x 1 cm. Horizontal section, oval with slightly pointed ends; vertical section, conical with flat base. Its impression (in Fig. 6) consists of a number of pittings arranged in a somewhat indefinite way (Reg. No. 2777; Field). Second seal. Steatite of a gray-green color. 2.80 cm long. Conical with a flat base, oval in horizontal section. Its design of curvilinear lines (nine in all, radiating outward from a common centre) is shown in Fig. 7 (Reg. No. 2145; Field). Third seal. Steatite. 3.70 x 3.55 cm. One side flat, the other rounded. On the flattened side there is a rough representation of an animal, probably an ibex (Fig. 8). Very worn. Burial 46 (Reg. No. 1816; Baghdad). Fourth seal. Steatite, mottled gray. 2.10 cm in diameter and 1.20 cm high. Conical with flat base. Fig. 9 shows its impression, which is a series of simple pittings arranged in a circle. Small lines radiate from some of the pittings. Burial 142 (Reg. No. 2830; Baghdad).

The following seals all come from mound "A," some from burials and others from the debris that covered that mound. They were either in too bad a state of preservation to give satisfactory impressions, or their subjects are illustrated by other seals. They are described for convenience in the order of their registered numbers.

- 1576. Shell. 2 x 2.50 cm. Burial 40. Two lions attacking an antelope protected by two men (Field).
- 1606. Same. 14 x 7.50 mm. Antelopes in file, facing to left in impression (Field).
- 1610. Same. 3.60 x 1.80 and 2.65 x 1.50 cm. Two seals in very bad condition. Burial 42.
- 1808. Glaze. 1.50 x .80 cm. Eagle with displayed wings, holding the tail of a rampant lion. Burial 45 (Baghdad).
- 1879. Same. 2.10 x 1.40 cm. Antelopes in file. Burial 50 (Baghdad).
- 1900 A. Shell. *a.* 1.30 x .90 cm. *b.* 1.20 x .70 cm. *a.* Lions seizing an antelope. *b.* Long-horned antelopes in file. Burial 51 (Field).
- 1907. Same. 2.20 x 1.20 cm. Two lions attacking antelopes (Baghdad).
- 1953. Same. 3 x 1.50 cm. Two lions with bodies crossed attacking antelopes. Behind one of the antelopes is an animal resembling a scorpion. Space left for an emblem or name. Burial 55 (Oxford).
- 1959. Same. 1.95 x 1 cm. Antelope. Burial 56 (Field).
- 1962. Same. 2.50 x 1.25 cm. Two lions attacking antelopes. Burial 56.
- 1969. Same. 2.15 x 1 cm. Two antelopes in file, looking back over their shoulders. Other objects appear to be bushes. Burial 57 (Field).
- 1973. Lapis lazuli. 2.10 x .70 cm. Two registers separated by a line. Upper register: eagle with displayed wings holding an antelope by either claw. One of the antelopes is looking backward at the eagle. Lower register: two men seated on stools, apparently drinking through a tube from a vessel between them. The men are dressed in single-fringed garments (compare Plate XLII, Fig. 4. Baghdad).
- 1987. Shell. 3.70 x 1.80 cm. Two animals with bodies crossed. One is a lion, and the other has an animal body, also a human face with beard and horns. The human-headed beast appears to be warding off a second lion. One portion of seal divided into two registers; upper register is blank, lower register contains a scorpion (Baghdad).
- 2012. Same. 1.90 x 1 cm. Poor condition. Apparently, a seated figure with another figure bowing before it. Burial 65 (Field).
- 2014. Calcite. 4 x 2.45 cm. Two lions with bodies crossed, attacking antelopes. On one side, the lion is being attacked by an indistinct animal form. On the other, the indistinct figure of a man wearing a single fringed garment is apparently assisting the antelope. Very worn (Baghdad).
- 2053. Shell. 2.70 x 1.55 cm. Two lions attacking antelopes. Bad condition. Burial 68 (Baghdad).
- 2061. Same. *a.* 2.50 x 1.30 cm. *b.* 2.30 x 1.10 cm. *c.* 1.70 x 1 cm. Not kept owing to condition. Burial 69.
- 2094. *a.* Shell. 1.60 x .90 cm. Paste. *b.* 2.70 x 1.50 cm. *a.* Single antelope. *b.* Apparently two figures facing one another, seated on stools and drinking (?) from a cup between them through a tube. Burial 70 (Baghdad).
- 2116. Limestone. 3.55 x 2.10 cm. Two registers: a gulloche of two. Lower register: two figures, each with arms upraised. Beyond an eagle with wings displayed, holding with each claw the foot of a stag. Somewhat roughly cut (Baghdad).
- 2148. Rock-crystal. 2.20 x 1.50 cm. An eagle with displayed wings holding an antelope with each claw. The animals face the bird, but their heads are turned to face backward (Baghdad).

2162. Shell. *a.* 3.10 x 1.80 cm. *b.* 2.55 x 1.50 cm. *c.* 2 x 1.15 cm. *a.* Lion attacking an antelope which is being defended by two men. *b.* Two lions with bodies crossed, each killing an antelope. *c.* Eagle with displayed wings, holding an antelope in either claw. Burial 77 (Field).
2214. Same. *a.* 2.50 x 1.50 cm. *b.* 2.40 x 1.20 cm. *a.* Too poor to give an impression. *b.* Lion attacking an antelope which is being protected by a man. Behind the man is another lion about to attack him. Burial 82 (Baghdad).
2219. Same. 1.15 x .80 cm. Two antelopes (?) rampant, beside what appears to be the trunk of a tree. Other trees or shrubs in the background. Burial 83 (Baghdad).
2227. Same. 2.90 x 1.60 cm. As far as can be seen, the design is of an animal standing on its hind legs, facing to the left. Burial 85.
2237. Same. 2 x 1 cm. Apparently, two seated figures facing one another with an indefinite object between them on the ground. Burial 86.
2270. Same. *a.* .20 x 9.50 mm. *b.* .20 x .80 mm. *a.* A row of animals in file, facing to the right with trees in the background. *b.* Owing to corrosion its design could not be made out. Burial 90 (*a*; Field. *b*; Baghdad).
2286. Lapis lazuli. 2 x 1.10 cm. Lion attacking an animal which is being protected by a man. Burial 92 (Field).
2299. Shell. 3 x 1.80 cm. Usual subject of two lions and antelopes. Scorpion also depicted (Baghdad).
2298. Same. 3.40 x 1.70 cm. As No. 2299.
- 2312B. Same. 14.50 x .90 mm. Eagle with displayed wings, holding an antelope on either side of it. Burial 93 (Field).
2341. Glaze. 2.40 x 1.20 cm. A man standing between two animals, holding the tail of each. One animal looks like a horse or ass, and has an upright plume-like tail. In a very poor condition (Baghdad).
- 2400B. Shell. 4.15 x 2.40 cm. Two registers separated by a fine line. Upper register: usual scene of lions, antelopes, and men. Lower register: apparently an ostrich and other animals, with two men dressed in short kilts, facing one another. Much too worn to be made out with certainty. Burial 107 (Baghdad).
2432. *a.* 3.30 x 1.60 cm. *b.* 2.90 x 1.70 cm. *c.* 3.80 x 2.10 cm. *a* and *c.* Shell. *b.* Bituminous limestone. *a* and *b.* Lion and bull with bodies crossed. The lion appears to be attacking an animal which is difficult to identify, which is being protected by a man represented full face with a long beard. *c.* Lion attacking an antelope. All in a very bad condition. Burial 104 (Baghdad and Field).
2459. Limestone. 4 x 2.10 cm. A lion attacking an antelope is all that can be made out. Burial 110.
2483. Shell. 1.50 x .80 cm. Antelope. Burial 113 (Field).
2493. Limestone. 4.50 x 1.10 cm. Antelopes in file. Below them is a decorative pattern of stars with four points (Baghdad).
2501. Shell. 3.10 x 1.50 cm. Figure of a man, full face, holding an animal by the tail with either hand. Burial 116 (Oxford).
2509. *a.* Lapis lazuli. *b.* Limestone. *c* and *d.* Shell. *a.* Antelopes in file. *b.* Lions and antelopes with bodies crossed. Man on either side, wearing fringed skirt, holding the tail of the lion and antelope, respectively. Behind one of the men is an antelope rampant. *c.* Man standing between two animals rampant, each of which is being attacked by a lion. Another man is apparently holding the tail of the lion. In a very bad condition. *d.* Man standing between a lion and a stag. Beside this group the seal is divided into two registers. Upper register: blank. Lower register: the figure of a man kneeling on one knee. Burial 117 (*b* and *d*; Baghdad. *a*; Field. *c*; Oxford).
2515. Limestone. 3.40 x 2 cm. Apparently a lion attacking an antelope with a man standing behind. In a poor condition (Field).

2547. Shell. 2.10 x 1 cm. Apparently, a row of men in short-fringed garments. In poor condition.
2555. Calcite. 1.95 x 1.30 cm. A boat with a human prow which holds a rudder. In the boat is seated a man holding an oar. Behind is a figure that resembles an antelope. This motif is very similar to some seals found during the season 1924-25. Burial 121 (Oxford).
2567. Shell. *a.* 2.90 x 1.50 cm. *b.* 3.90 x 2 cm. Lions with bodies crossed, attacking antelopes. One of the antelopes is being assisted by a man holding a weapon of some kind in one hand and a stick in the other. Beyond, the seal is divided into two registers. Upper register: blank. Lower register: a plaque-like form. *b.* Lion attacking an antelope(?) (Field).
2569. Calcite. Gilgamesh(?) holding a lion with one hand and an antelope with the other (Oxford).
2591. Shell. 2.10 x 1.20 cm. Unintelligible owing to poor condition. Burial 126.
2595. Calcite. 2.10 x 1.20 cm. A series of chevrons, bounded by a line above and below (Field).
2615. Shell. 3.90 x 2.10 cm. Human figure, represented full face, holding a spotted animal on either side of him by the legs. Beyond, two lions with bodies crossed, attacking an antelope, which is being protected by a small figure. Vacant spaces in the seal are filled up with lines arranged chevron-wise. Burial 127 (Field).
2648. Same. *a.* 2.30 x 1.10 cm. *b.* 1.90 x .90 cm. *a.* An eagle with displayed wings, holding an antelope in either claw. *b.* Similar motif. Burial 128 (Baghdad).
2665. Same. 1.60 x 1.25 cm. A man seated in a chair with a low table in front of him. Another man apparently making an offering to the first. Behind the second figure is a long-horned antelope in the act of running (Field).
2674. Same. 2.40 x 1.10 cm. Two registers. Owing to condition, the subjects are almost unintelligible, but in one register a man is shown seated in a chair. Burial 131 (Field).
2687. Material(?). 2.60 x 1.30 cm. Lions attacking antelopes, who are being protected by a man. Burial 133 (Baghdad).
2694. Serpentine. 1.70 x .80 cm. Man fighting with a lion. He appears to be holding its front paws with one hand and stabbing it with the other. Beside this scene there is a composite figure with the feet of an ox, an indefinite body, and what appears to be a scorpion above (Baghdad).
- 2718B. Silver. 2.30 x 1.20 cm. In too poor a condition to be intelligible. Burial 135 (Oxford). See Plate XLIII, No. 9, to the right of toilet case.
2729. Shell. 1.50 x .70 cm. An antelope walking to the left (Baghdad).
2779. Same. 2.20 x 1.30 cm. Two men dressed in long skirts, seated facing one another. Behind them is what appears to be a door. Between the seated figures is a man with arms uplifted, facing one of the figures and holding an indefinite object in his hand. In poor condition (Field).
2792. Same. 2.75 x 1.20 cm. All that can be made out is two lions with bodies crossed. Burial 139.
2817. Same. 2.80 x 1.40 cm. As previous seal. Burial 141.
- 2850A. Faience. 1.50 x .90 cm. Lion pursuing an antelope. In very poor condition. Burial 144.
2883. Lapis lazuli. 2.80 x 1.40 cm. A man with short-fringed skirt is shown soothing an antelope. Crossing the body of this antelope is the figure of a lion attacking another antelope. Farther on, the seal is divided into two registers by a double line. Upper register: unfortunately broken so that it is impossible to tell whether it was ever filled in. Lower register: a tree. Burial 146 (Baghdad).

STONE VESSELS

Plates XXXVIII, No. 10, LV and LVI

Stone vessels were found in only ten graves in all. Of these, six were undisturbed, and the stone vessels in them occupied the following positions: in front of knees (graves 104 and 135) and in front of face (grave 93); above head (grave 117); behind head (grave 51); behind shoulders (grave 96). It seems therefore that no particular value was attached to these objects, if their position in the burials is any criterion. The distinctive features of the stone vessels, which were found in actual burials, and are dated thereby, may be enumerated as follows:—

PLATE LV

- Fig. 2. Burial 96. Limestone. Shallow bowl, poorly made with especially thick base (see Fig. 12 in Plate XXXVIII, No. 10. Reg. No. 2332; Field).
- Fig. 6. Burial 135. Alabaster. Rather deep bowl with slightly rounded base, well-made, fairly thin, and well polished (see Fig. 13 of Plate XXXVIII, No. 10). Found together with Fig. 8 of Plate LVI (Reg. No. 2715; Field).
- Fig. 10. Burial 93. Finely veined alabaster. Shallow, circular dish, with fairly thin sides and thick, heavy, slightly rounded base (see Fig. 4 of Plate XXXVIII, No. 10). The upper edge has been rubbed down, showing that the dish has been re-used (Reg. No. 2301; Baghdad).
- Fig. 13. Burial 117. Gray granite. Small cup-like bowl, neatly made with small, slightly rounded base, and well polished (see Fig. 10 of Plate XXXVIII, No. 10). Rim anciently chipped (Reg. No. 2508; Oxford).
- Fig. 15. Burial 80. Alabaster. Bowl with slightly incurved sides, thin and well-made, smoothed down to a fine polish (see Fig. 6 of Plate XXXVIII, No. 10). Rim chipped anciently (Reg. No. 2185; Oxford).

PLATE LVI

- Fig. 1. Burial 94. Gray tufa. Shallow bowl of thick and heavy make (see Fig. 9 of Plate XXXVIII, No. 10). Its edge has been ground down for re-use after being broken; hence its rough and uneven shape (Reg. No. 2325; Field).
- Fig. 2. Burial 48. Alabaster. Shallow bowl, well-shaped. Rim decorated with fine notches which suggest a rope pattern (see Fig. 5 of Plate XXXVIII, No. 10). Slightly damaged anciently and corroded (Reg. No. 1846; Field).
- Fig. 3. Burial 51. Alabaster. Well-shaped jar, but solid and heavy, especially at the base, whose thickness is out of proportion to the size of the jar (see Fig. 3 of Plate XXXVIII, No. 10). Slightly damaged anciently and corroded (Reg. No. 1893A; Field).
- Fig. 5. Burial 85. Gray tufa. Bowl, deep for size, with rounded base (see Fig. 11 of Plate XXXVIII, No. 10). Badly broken anciently and part missing. As the burial in which it was found had been disturbed, this bowl may possibly be an intrusion (Reg. No. 2224; Oxford).
- Fig. 8. Burial 135. Tufa. Small dish with extraordinarily thick flat base for size (see Fig. 8 of Plate XXXVIII, No. 10). Rim chipped anciently (Reg. No. 2716; Oxford).
- Fig. 9. Burial 104. Granite. Thick, heavy bowl, deep for size, with inside roughly ground out (see Fig. 2 of Plate XXXVIII, No. 10). Rim shows signs of having been ground down for re-use (Reg. No. 2437; Field).

From the fact that most of these bowls and dishes are clumsy in form with slightly rounded bases and convex sides it would appear that the manufacture of stone vessels, even of the simplest type, was a decaying industry in the period of the "A" cemetery. But that stone vessels were valued notwithstanding is proved by slightly broken ones being ground down to make similar vessels. There were rivet holes in fragments of alabaster bowls found elsewhere in Kish, and silver or copper wire was used to repair them. The cutting-down was more or less carelessly done, the resulting dishes and bowls being very much out of shape, as will be seen in Plate LV, Fig. 2 and LVI, Figs. 1, 9-10. The comparatively small number of stone vessels in the graves also suggests a dying industry, unless the scarcity of them is due to their being considered too valuable to be buried. A number of stone bowls and dishes were found in situations other than the graves of mound "A." In most cases they were in a very fragmentary condition, and the illustrations given are reconstructions from these fragments; for, provided there is a piece of the base, a portion of the rim and some connection between them, it is a fairly simple matter to ascertain the original shape of the bowl or dish to which the fragments once belonged. Of these stone dishes, only three (Plates XXXVII, No. 1 and LV, Figs. 5-9), which came from the level of the palace, can be dated. For a further description of these three, see last chapter.

The level bases, slightly concave sides and thin walls of most of these dishes which were not found in graves, are very noticeable, and show a high level in stone-working. I think, therefore, that it is permissible to assume that the majority of them belong to an earlier period than do the bowls and dishes of an obviously coarser type which were recovered from the graves.

The distinctive features of the stone vessels, which being found neither in the palace nor in the graves are of uncertain date, may be enumerated as follows:—

PLATE LV

- Fig. 1. Tufa. Bowl with very thin, flat base. Fragment only. Found 1.50 m below the surface on the south slope of mound "A."
- Fig. 3. Limestone. Fragment. Rounded base, unpolished. Picked up by basket-boy on surface of mound.
- Fig. 4. Gray limestone. Shallow bowl with flat base and incurved sides, well-made. Fragment only. Two rivet holes show that this bowl was valued and thought worth mending. Found 35 cm below surface of mound.
- Fig. 7. Tufa. Small, flat-based dish, anciently broken and repaired. Found 1.25 m below surface on eastern side of mound (Reg. No. 1280; Baghdad).
- Fig. 8. Light-green slate. Bowl deep for size, flat-based, with very smooth surface flawed in places owing to quality of the stone. Fragment only. Found about 2 m below surface on eastern side of mound.
- Fig. 11. Alabaster. Shallow bowl, whose form suggests that it is of the period of the graves. Edge much chipped with use. Found 1 m below surface of mound.
- Fig. 12. Alabaster. Bowl with slightly rounded base and incurved sides. One m below surface of mound.
- Fig. 14. Tufa. Bowl with thin, flat base. Found 30 cm below surface of ground.

PLATE LVI

- Fig. 4. Alabaster. Vase thick for size, but beautifully made and finished, with excellent shape and polish. Fragment only. Found at 1.10 m below surface of mound.

- Fig. 6. Limestone. Mortar with curious, rounded rim and slightly rounded base. No pestle. Found in chamber marked on skeleton plan of the palace; these are probably of period of the graves.
- Fig. 7. Limestone. Dish with flat base, probably originally rectangular, with projecting spout at one end. Fragment only. Found about 1 m below surface of mound and from its position probably had been thrown out or washed out of a grave.
- Fig. 10. Limestone. Small bowl with flat base. Found 60 cm below surface of mound. Rim appears to have been ground down for re-use after being broken. May have originally belonged to palace period and been re-used at period of the cemetery (Reg. No. 2228; Field).
- Fig. 11. Limestone. Mortar with smooth, but unpolished surface. No pestle. Found about 1 m below surface of mound.
- Fig. 12. Pink limestone. Mortar, polished outside. No pestle. Base and interior worn with much rubbing. Is badly knocked about and chipped. Found about 1 m below surface (Reg. No. 1330; Baghdad).
- Fig. 13. Tufa. Mortar with incurved sides. No pestle. Bears evidence of much use. Found about 1 m below surface of mound.

In none of these mortars are there any stains or other evidence as to what substances were ground in them. The material of which the majority were made proves that the substance to be ground was not very hard. Though there is in some of the specimens evidence of a good deal of wear, this seems to be the result of constant use rather than the harshness of the material ground. It is not surprising that no mortars were actually found in the graves; for their use would obviously be confined to the kitchen, as in the case of the large bowls and pans described in the chapter on Pottery as belonging to small houses of the period of the cemetery.

MISCELLANEOUS OBJECTS OF UNCERTAIN DATE FROM MOUND "A"

This chapter is devoted to the various objects found in and upon the mound, which neither belong definitely to the period of the palace nor to that of the later cemetery. Plate XXXVI, Fig. 9, shows a block of hard cherty limestone with a rounded top and flat base. It is 1.20 cm long, 8.50 cm high, and 4.80 cm thick. On the base the figure of a man is roughly incised, goading an ox (?) with a stick in one hand, and with the other hand holding the animal by the tail.⁵³ Other details of the scene unfortunately cannot be identified owing to the damage caused by the stone while it was used as a hammer. The stone is polished, and from its shape seems once to have been some kind of votive tablet. It was found lying in a layer of ashes 1 m below the surface of the ground on the southern side of mound "A," but its position alone does not suffice to date it (see also Plate L, No. 12. Reg. No. 771; Oxford).

Figs. 10 and 12 of Plate XXXVI show the obverse and reverse sides of a tablet found beneath a platform of convex-plano bricks at the north-west corner of chamber 31 of the palace. From the style of writing which is linear, and the square heads of the characters, this tablet does not date earlier than 3000 B.C. It can, therefore, be regarded as belonging approximately to the period of the cemetery. This tablet is 9.30 x 8.90 x 2.70 cm, and is of unbaked clay with slightly rounded edges. It contains accounts which include numerals and proper names, and a translation by S. Langdon will appear in a forthcoming publication. It was found at a level of 47 cm below datum and 2.11 m below the surface of the ground (Reg. No. 2410; Oxford).

Plates XXXVII, Nos. 7-13, and XLVII, No. 8, show a series of objects from a grave of the Greek period which has been described in the chapter on the later brickwork and walling. No. 7 is a bronze ring that measures 1.90 cm across. It is made from a strip of metal widened in the middle to form a bezel (Reg. No. 798; Field). No. 8 is a pottery lamp, somewhat roughly made, with its spout blackened by use. It is coated with a smooth glaze which has lost its original color and is now white (Reg. No. 800D; Oxford). The lamp shown as No. 9 has the merest suggestion of a handle, and is slightly ornamented on its upper surface with a design in relief. It is made of clay of a straw color and indifferently baked (Reg. No. 800F; Oxford). No. 10 is a vase with a handle and a narrow neck and mouth. It is made of a soft straw-colored paste coated with a fine thin glaze which is now white and badly crackled all over by salt. The surface of the jar beneath the glaze is very rough; probably purposely so, in order to afford a keyhold for the glaze. The base too is very rough (Reg. No. 800A). No. 11 shows a dish of thin pottery with a groove around the outside of the rim. It is of straw-colored ware, coated with glaze, and is a well-made dish, but slightly twisted in firing (Reg. No. 800C; Baghdad). No. 12 represents a small dish coated with a thin glaze, now

white, which still bears traces here and there of its original blue color. The ware is good, and the surface slightly roughened to take the glaze, which is smooth and level (Reg. No. 800B; Oxford). No. 13 is another lamp with a slight decoration in relief on its upper surface. It is coated with glaze. The mouth is slightly broken and shows traces of smoke (Reg. No. 800E; Baghdad).

The pottery figure (Plate XLVII, No. 8) was also found in the grave, but it is not known with what body it was placed. It is 26.20 cm long, and represents a nude female with an elaborate head-dress. The figure was made in a mould in two pieces, back and front. The fitting-together of these two halves was well done, the surplus clay being pared off with a knife. There are indications here and there that the figure was once covered with stucco and then painted (Reg. No. 799; Baghdad). Another figure also found in this grave is made of alabaster; but it is not illustrated, as the head is missing, and as it was very badly incrustated with salt. It represents a partially nude female in the partly recumbent posture common to the period (Reg. No. 800G; Baghdad). Two strings of beads include ivory, glaze, glass, limestone, and quartz (Reg. No. 796; Field. 797; Baghdad).

Plate XXXVIII, Figs. 4-6, represents flint hoes, all of which were found in the debris covering the palace. They have no certain history. Judging from their positions, they probably belong to the period of the cemetery; that is, about 3000 B.C. These were photographed to the same scale, and the object in Fig. 4 is 12.50 cm long, 3.90 cm wide, and 10.50 mm maximum thickness. The three were made of light-gray chert, and none shows any signs of being used or any trace of polish on their edges. They were probably lashed to a wooden handle, and the thongs smeared with bitumen (Reg. Nos. 1589; Oxford. 2931; Field. 2258; Field. See also Plate LIX, Fig. 43). The small flint in Fig. 36 of the same plate was found just below the surface of the mound. It is 3 cm long, 3.50 mm wide, and 2.50 mm thick. A portion is wanting from one end. This object shows signs of secondary chipping and on account of its scoop-like end may have been used to apply kohl. The flint flakes (Figs. 41-42 of the same plate) were found together 30 cm deep on the south side of the mound.

In Plate XXXVIII, No. 7, the object on the left is a plumb-bob found 3 m below the surface of the palace mound. It is 3.60 cm high, and is made of limestone whose faceted face is thickly coated with bitumen to give it a globular form. A hole bored from both ends is provided near the top for suspension (Reg. No. 2229B; Field). A similar plumb-bob (Plate LIX, Fig. 37) was found with Fig. 33 at a level which suggests that they may have been used in the building of the palace. It also is faceted, but no traces of a bitumen covering remain. The plumb-bob on the right in Plate XXXVIII, No. 7, was found close to the surface of the ground, but as it so closely resembles those from the palace level, it may perhaps have been re-used during the period of the graves. It is also made of limestone with faceted sides, and it was doubtless once coated with bitumen. The hole for suspension is in this example replaced by a groove to take the cord (Reg. No. 1616; Field. See also Plate LIX, Figs. 33, 34, 37).

No. 8 of Plate XXXVIII illustrates an interesting series of stone celts which all came from mound "A" with the exception of the last, picked up on

mound "W" to which it had evidently been brought. They are all hard stone and on the whole well-made. The first from the left is of slate (Reg. No. 2930; Oxford). The ones beside (Reg. No. 2740; Oxford) and below (Reg. No. 2297; Field) are of a hard black stone resembling basalt. The largest and best-made specimen (Reg. No. 2753; Field) is 4.80 cm long, 3.30 cm wide at the cutting edge. It is of hard limestone. The specimen in the upper right-hand corner has a well-defined cutting edge (Reg. No. 2125; Field), and is made of green jasper, and the one below (Reg. No. 1692; Oxford) is a hard, dark-gray stone. It is probable that these celts were used for warfare. As all these weapons were found close to the surface of the mound, they can hardly be of an earlier date than that of the graves (see also Plate LIX, Figs. 46-48). The celt illustrated in Plate LIX, Fig. 45, is of gray-green slate and badly chipped.

Plate XXXVIII, No. 9, shows a group of hones which with the exception of the fourth and the largest were found scattered over the "A" mound. The exceptions were found in burials 93 and 42, respectively, and have been described in the chapter on Tools and Weapons. These hones are either sandstone or slate, the four smallest being of the latter stone. Their dimensions are indicated by the scale, which represents 5 centimetres. It will be seen that rough water-worn pebbles were used for making hones as well as hand-cut stones like the fourth, which alone is circular in section (Reg. No. 2318; Field). The fifth hone is of slate, and has the hole bored from both sides. It was found 1 m below the surface. Nos. 2137 and 1611 were sent to Field Museum, and Nos. 2355 and 1834 were retained by Oxford (see also Plate LIX, Figs. 39-40). The second hone should not be included in the group. It was found on mound "W," and is Neo-Babylonian in date.

A shell very similar to that shown in Plate XXXVIII, Fig. 3, but undecorated, was found lying on the pavement in one of the chambers marked in the skeleton plan of the palace. It is 19.50 cm long, and had a hole in it repaired by inserting a small plug of lead which was burred over on both sides (Reg. No. 2103; Baghdad).

The object shown in Plate XXXIX, Fig. 2, is an adze of copper or bronze, 14 cm long and 9 cm high at the socket. It was found at the base of a pottery drain in chamber 61, and is in a remarkable state of preservation, owing perhaps to its position protecting it from salt. There was no means of exactly dating the drain in which it was found, but it was certainly later than the palace. I would assign this adze to the period of the first dynasty of Babylon, although in the Baghdad Museum there is a similar implement of unknown date, made of iron—a metal which appears to have been unknown in that period. Andrae⁵⁴ illustrates a tool of this type among objects which are of the same period as the "A" cemetery, to which, however, I do not think it can possibly belong (Reg. No. 1491; Baghdad).

The silver ornament shown in the right-hand lower corner of Plate XLII, No. 16, is flat on one side and rounded on the other, with radiating lines around an open space in the middle. The reverse has the same design as the front, but is partly hidden by a dome-shaped piece 1.30 cm in diameter and .50 cm high.

This dome is broken at the top in such a way as to suggest that a ring is wanting. By analogy with silver ornaments found in the burials in the "A" cemetery, this object probably belongs to the same period. This ornament is 18.50 cm in diameter and .50 cm thick in the middle (Reg. No. 2392; Baghdad).

Plate XLII, No. 17, shows a number of objects found on or just below the surface of the palace mound. Their dimensions are indicated by the scale, which represents 3 centimetres. The four notched flints at the top of the illustration were undoubtedly used as teeth for a sickle. Some of the bitumen by which they were fastened in position still adheres in the specimens shown in the right-hand corners of the illustration (Reg. Nos. 917; Field. 1391; Baghdad). An examination of the impression on the bitumen shows that these flint teeth were formerly fastened to a pottery implement of some kind. This probably explains the numerous pottery sickles found on most ancient sites in Mesopotamia. These sickles are quite useless as they are found, but, provided with flint teeth, they serve their purpose adequately.⁵⁵ Flint cores and flint flakes similar to those on the left of the illustration are common objects on the palace mound. They are found on the surface as well as deep within it, and their use seems to have extended over a long period of time. The upper flint arrow-head (Reg. No. 873; Baghdad) was found on the surface close to the "A" mound, from which it may have been washed down. The lower one was picked up by a boy close to the palace, though he was unable to tell us exactly where. The arrow-head between the two notched flints on the right of the illustration was picked up by myself on the surface at the highest part of the mound (Reg. No. 747; Baghdad). Flint is not obtainable in Babylonia itself, and was probably brought either from the Arabian desert or from Elam. The former seems the more probable, for flints can be picked up from the surface of the ground in that country. It seems that as in Egypt, flint was used for many purposes up to a comparatively late period in the form of long, thin flakes similar to those in the illustration.

The knife-handle shown in Plate XLIII, Fig. 10, was found 1.40 m below the surface of the ground, just above the footing at the southern end of court 6 of the palace. The close resemblance of this object to those shown in No. 2 of the same plate suggests that it is also of the grave period. This handle is 8.70 cm long, 24 cm in diameter at the base, and 1.90 cm in diameter at the top. It is made of calcite, and the bands (6 mm wide) which ornament it are of bitumen. The circular cuttings made in the stone are slightly bevelled and average 2.50 mm in depth; but this bevelling being the wrong way about does not assist in keying the bitumen inlay (Reg. No. 2668; Field).

Plate XLIII, Fig. 7, shows a portion of a small statuette that was found in the chamber enclosed by a later walling marked in the skeleton plan of the palace (Plate XXII). It is 3.50 cm in height, and is made of gypsum. A garment is worn passing over the left shoulder and under the right arm. The eyes were evidently once inlaid with some other substance, probably lapis lazuli, which has disappeared, and owing to the action of salt the features are sadly corroded. From the level at which this figure was found and its locality it belongs most probably to the cemetery period (Reg. No. 2346; Field).

In Plate XLIV, Fig. 1, are shown two curious pottery stands, the lower one of which was broken anciently and repaired with bitumen. Their size is indicated by the 5 cm scale alongside them. These stands are extremely well baked, with a rolled edge at the base and a very thin upper edge. The upper one was photographed from above in its proper position, and the lower one is lying base uppermost. Such stands must have been used to support round-based jars while drying, the knife-like upper edge on account of its thinness precluding any risk of the jar adhering to the stand. On account of the bitumen used to repair it, the lower stand at least cannot have been used in the kiln. As these stands were found just below the surface in the middle of mound "A," they presumably belong to the period of the graves (Reg. No. 2234B; Oxford. 2234A; Field). Fig. 2 of the same plate illustrates the simple pottery rings of which large numbers were found in the debris covering the palace. They vary in size from 5.30 to 8.50 cm in diameter, the hole through them averaging 2.50 mm in diameter. As a rule they are carefully made, and of baked clay in all cases. They are too small to have been used as stands for pottery, with which must be coupled the fact that the pottery of the grave period, to which these rings apparently belong, never had the base pointed. It is probable, therefore, that these objects represent some form of game for children, perhaps quoits; and the trifling variation in size of the many specimens found certainly lends support to this conclusion (Reg. No. 2918 A, B and C; Oxford and Field).

In the upper portion of No. 3 in Plate XLIV are shown two curious objects of lightly baked clay which are rounded in form with slightly conical upper and lower surfaces and an average diameter of 5 centimetres. They may possibly be jar-stoppers. From their position, .50 m below the surface of the ground, they presumably belong to the grave period (Reg. No. 2607A; Field. 2607B; Oxford). The two objects in the lower part of No. 3 were found about 3 m below the foundations of the north-west corner of the palace. They must, therefore, belong to the same period as the palace or earlier. The one on the left measures 5.30 cm in length, and that on the right 4.60 centimetres. Both are made of unbaked clay. From their shape they must be sling-stones of the period of the first dynasty of Babylon. They are also comparable in shape with the sling-stones found in the Glastonbury Lake Village. The small sling-stone in the middle of the illustration was found at a depth of 1 m in the "A" mound (Reg. No. 2345; Oxford). It is a natural water-worn pebble.

In No. 4 of Plate XLIV is shown a set of objects made of bitumen, of a type which is very common in the "A" mound, occurring at various depths. They are variable in size, the base is flat, and the upper surface slightly conical. The specimen in the lower part of the illustration is 3.50 cm in diameter. It has been suggested that these are jar-stoppers; but I prefer to regard them as being some form of draughtsmen, as they are far too small to serve as stoppers to any of the pottery found. From their situation in various parts of mound "A" they are probably of the same date as the graves (see also Plate L, Figs. 9-11. Reg. Nos. 2361; Oxford. 2362; Field with others unnumbered). Figs. 5 and 6 of the same plate show two objects which are still a problem. They are made of baked clay, being 8.90 cm

across and 8 mm thick. They are obviously a pair, and were photographed to show the upper face of one and the lower face of the other. They are well-made and very smooth on the upper surface. Possibly they may be clappers or bones, but their fragile nature makes them hardly suitable for this purpose. They were found close to and at the same level as the block of brickwork marked in the skeleton plan of the palace, and they are therefore of the same period as the annex (Reg. Nos. 765; Oxford. 766; Field).

The first vessel shown in Plate XLIV, No. 9, is earlier than the grave period; it was found at a level of 53 cm below datum, or 1.12 m below the surface of the ground. It therefore belongs to the same period as the northern part of the palace (Reg. No. 2895C; Field). It was found with the tall-spouted jar, the last piece of pottery but one on the right and both with other jars belonging to the same group are described in the chapter on pottery. The bowl on the right of the illustration is unusual in being unduly thick and made of a brownish-colored ware whose surface has been slightly polished with a pebble. It is undated, but it corresponds very closely with some bowls found in the graves (Reg. No. 2328; Field). In Plate XLV, Nos. 1-2, we see what appear to be fragments of pottery dishes curiously ornamented with human faces all the way round. No. 1 comes from the palace mound, where it was picked up by a small boy. It is exceedingly well baked, and the ware is gray-green in color. The notched beading which was part of the rim is a roughly modelled nose with eyes on either side of it made of flat pellets of clay with a circle incised in the middle to represent the iris. A noteworthy feature is a third eye placed where the forehead should be (Reg. No. 823; Field). No. 2 was found 40 cm below the surface on the south-west side of the platform of the Ziggurat at Tell Ahaimir. It is included here on account of its resemblance in design and material to the fragment just described. This fragment too is evidently part of a bowl or dish which could be suspended by holes through two or more lugs, one of which remains (Reg. No. 383; Baghdad). The strong similarity between these two fragments and the figures on the handles of the type A jars from the "A" cemetery proves them of the same date. That the presence of a third eye has a meaning and is not merely a decorative feature is suggested by its presence in both examples, but there is still further evidence in the fact that the figures of what appear to be deities in two cylinder seals from the "A" cemetery are also provided with three eyes (see Plate XLI, Nos. 8 and 17). This point should later on prove to be of value in identifying the particular deities which these figures represent.

Plate XLV, No. 3, shows two curiously decorated pottery dishes. That on the left is 15.90 cm long, 8.60 cm wide and 4.85 cm high. It was found 40 cm below the level of the ground at the northern end of chamber 55 of the palace. From its position it would seem to belong to the period of the burials. In shape it is rectangular, and it is entirely hand-made with the corners slightly pinched outward. The outside is plain, but the inside is decorated with a design deeply incised with a sharp point that suggests a field surrounded by canals in one of which there seems to be a fish. The figures of two animals, perhaps turtles, appear at either end. There are deeply punctured holes at irregular intervals in

the design which may possibly have been used to hold the stalks of flowers. The sides of the interior are decorated all round with representations of trees drawn in a very archaic fashion (see Plate L, Fig. 7, for a clearer representation of the design. Reg. No. 1860; Baghdad). The second dish was found high up in the debris filling the pillared hall. It is hemispherical in shape, with the inside plain, but decorated in relief on the outside with representations of trees separated by five radial partitions. I am inclined to think that this object is a mould rather than a dish on account of the design being in relief (Reg. No. 1831; Field). Two objects of the same technique are shown (Fig. 4). The upper one (Reg. No. 2543; Field) is 6.40 cm in diameter at the rim, and is 2.60 cm high. The lower one (Reg. No. 2625; Oxford), which is incomplete, is 9 cm in diameter and 3 cm high. It has a hole on one side just below the rim as in the similar mould in Fig. 3. From the similarity of the trees in their designs to those on the ornamented dish described above and to the trees on some of the handled jars found in the graves, these moulds must almost certainly be of the same date; that is, the period of the graves. Dishes or moulds very like these are known from Susa.⁵⁶

In Fig. 5 of the same plate is shown a jar of ash-colored clay with an incised decoration filled in with gypsum. The pattern, as will be seen best in the sketch of Plate LII, Fig. 9, commences from the top of the shoulder in the form of a double row of double circles, 9 mm in diameter. Above these is a series of squares averaging 2.30 cm each way. Above again are more circles surmounted by another row of squares immediately beneath the rim. The white pigment projects for an appreciable distance beyond the face of the jar, but this may partly be accounted for by the fact that the jar had been accidentally burnt (it was found in a heap of ashes). This most interesting jar is in a deplorable state owing to salt, but there is reason to think that its surface was originally semi-polished. It was found in the building marked in the skeleton plan of the palace, and is probably of the same period as the graves (Reg. No. 2131; Oxford). The group of pottery illustrated in Figs. 23-27 of Plate LI was found together, a little north of the N. W. corner of the palace at a depth of 1.12 m below the surface of the ground, or 52 cm above datum level. This was well above the bottom of the foundations of the palace, and I would date this group to the palace period, owing to the shapes of Figs. 26 and 27 which do not in any way resemble the pottery found in the graves, though Fig. 23 might well have come from a burial, as it is similar in type to Fig. 22. About 75 cm below the surface of the ground in mound "A" the broken fragments of a large jar were found, similar to that shown in Plate LIII, Fig. 56. On one side the shoulder is ornamented with three drawings in black paint, of which Fig. 13 of Plate L is a tracing. On the left is what seems to be a representation of the sun surrounded by rays; in the middle, a curious ladder-like object; and on the right, a semicircle with a dot in the centre. This jar probably belongs to the same period as the graves, for the pot with which it is compared was found in a building of that date (Reg. No. 2046; Field).

The bracelet in Plate LIX, Fig. 22, was found with an iron bracelet at a level of 75 cm below the surface of the ground. Its association with the iron bracelet would show that it is of late date, and it will probably be found to be made of

bronze. It is 4.80 cm in diameter, and made of wire 5.50 mm in diameter, whose ends have been thinned out, and each twisted round the opposite side of the bracelet. The accompanying iron bracelet is 44 mm in diameter, and made of wire 4 mm in section which is bent into a circle whose ends do not quite meet (Reg. No. 2692; Field). Plate LIX, Fig. 31, represents a flat rectangular plaque whose intended use it is difficult to determine. It is cut out of a schistose rock, and is 11.80 cm long, 8.50 cm wide, and 6.50 mm thick. Five holes run obliquely through the plaque, one at each corner and one near the middle of one of the longer sides. This is a well-made object; both surfaces are smooth, and show a certain amount of polish. It was found .50 m below the surface of the highest part of the mound (Reg. No. 2705; Field).

The palette shown in Fig. 32 is made of dark-colored limestone. It is 12.30 cm long, 10.50 cm wide, and 11 mm thick, and is nearly round in form with two lugs, each perforated with a small hole, on opposite sides. Both surfaces show signs of rubbing, but no trace of color remains. Though the stone of which the palette is made is hardly suitable for rubbing coarse materials, it would serve for the preparation of paints and colors such as the various ochres (Reg. No. 1377; Field).

Fig. 35 of the same plate, which is probably a wheel from a model chariot, though its edge is rather sharp for this purpose, was found 80 cm below the surface. It is 8.90 cm in diameter and 1.75 cm thick. A well-bored hole, 18 mm in diameter, runs through the centre of the object, which has a circular depression around the hole on one side (Reg. No. 1614; Field).

Fig. 44 of Plate LIX is a piece of gray limestone 5 cm long and 1.70 cm wide. Its edges are faceted, and one end is chisel-edged. This object may have been intended to be a plumb-bob or possibly an amulet, but was left unfinished with neither hole nor groove for a cord. It was found about 1 m below the surface of the ground (Reg. No. 664; Baghdad).

The shell medallions illustrated on Plate LX, Figs. 6 and 7, were found by themselves in the debris of the palace mound. Fig. 6 is 1.90 cm in diameter, and is made of a thin plate of shell engraved on both sides with concentric circles and radial markings. It is perforated at the centre and either side, apparently for sewing on a garment (Reg. No. 2147; Field). Fig. 7 is slightly smaller than 6, and has but a single hole in the centre. Though these objects cannot be precisely dated, it is probable from analogy with the silver medallions found in the graves that they belong to the same period.

The illustrations of Plate XLVI show an interesting series of chariot models which were found just below the surface of mound "A." They were the toys of children by whom the mound covering the deserted palace was used as a playground. Like the child of the present day, the Sumerian child delighted in anything that ran on wheels. He no doubt took as much pleasure in these simple toys as a modern child takes in his more elaborate mechanical ones. Besides the sentimental interest attached to these objects of the past, they are of extreme value as showing that chariots of this type were used in warfare about 3000 B.C. They

were probably copied with as much fidelity as possible. It is obvious that the better-finished chariots were made by adults, for the work is too good to be that of a child. On the other hand, some of the objects are but roughly made, and could therefore be the work of children. All were made of clay and exceedingly well-baked. Not one example shows any signs of having been moulded; they are all entirely hand-made. Perhaps the most interesting is Fig. 3. It is 10 cm high, made of yellowish clay and well-baked. The upper portion is surmounted by the head and neck of an animal which it is very difficult to identify; but the head appears to resemble a ram more than anything else. In front of the neck is a lug perforated with a small hole to take a string by which the object could be pulled along. The body of the animal is represented as barrel-shaped, but unfortunately the greater part is missing. To reduce the weight the body is hollow. At the base of the body close to the front are the broken remains of a long lug at right angles to the body to take the axle for a pair of wheels. A similar lug doubtless existed at the back of the animal for another pair (Reg. No. 1533; Baghdad). Figs. 5 and 7 can be compared with the object just described. These two photographs are of the same object, but one in it has been slightly tilted to show its hollow interior. Obviously this is the model of an animal's body covered with long hair or fleece, indicated by lines roughly scratched with a sharp point. A line along the middle of the top of the body evidently represents a parting from which the hair or fleece hangs down on either side. On the front of the chariot is a shield marked with two oblique lines set close together. The base of the shield is considerably thickened to form a box for the axle. At the top of the shield there are two notches, evidently intended to take a pair of reins. There is a hole for the shaft a little below the middle of the shield (Reg. No. 958; Oxford). The other chariots shown in Figs. 1, 2, 4, and 7 (except the one in the right-hand lower corner of Fig. 1) are evidently modifications of the two chariots just described. They range in size from 5 cm in length to one which is 7.70 cm long and 10.60 cm high. The resemblance to an animal is disappearing in these examples; they are more like saddles on wheels. Indeed they closely resemble the native saddles used for horses in Mesopotamia at the present day (Reg. Nos. 2606; Field. 2574; Field. 2923B; Field. 2808; Field. 795; Baghdad. 1404; Field. 1412; Field. 1311; Oxford).

There is yet no information as to when the chariot was introduced into Babylonia. It may have been invented in that country, or was introduced from abroad. From a study of these objects found at Kish I am inclined to think that the chariot was a local invention, as all the stages from archaic forms to well-designed vehicles are found here. It would appear, as in other countries, that an animal was early used for riding, whether the horse or some other kind of quadruped. When the wheel was invented, a model of the animal generally ridden was placed on wheels, the head being retained at first and later replaced by the wider and more protective shield. In course of time, the vehicle ceases to retain any of the characteristics of an animal and becomes, as it were, a saddle upon wheels. From this time onward, the idea of sitting inside instead of upon the saddle would gradually be evolved, and we find the type of vehicle represented in the

right-hand lower corner of Fig. 1 (Reg. No. 2923D; Field). This chariot is of cart-like form and has four wheels, but two wheels were also used as in Fig. 6. That these two chariots were intended to carry passengers rather than material is proved by the presence of a step at the back, that they might be entered easily. The chariot shown in Fig. 6 is 6.40 cm long, 7.30 cm high, and 4.50 mm wide. It is perfect, except for the fact that the two wheels belong to another chariot. The shield in front has a pair of holes for the reins, and there is also a hole for a shaft or pole, showing that two animals were required to draw the vehicle. A narrow seat is provided for the driver at the back of the box-like body, to which the above-mentioned step permits of easy ascent (Reg. No. 1122; Field). These same features are found in the chariot in Figs. 8-9, which, however, is in some respects still more elaborate (Reg. No. 2015; Oxford). The upper edge of the shield-like front has, unfortunately, been partially broken away; but enough remains to show that the reins were passed through it as in Fig. 6. On the left-hand side of this shield there is a quiver for arrows in two compartments, and that the quivers were lashed on in chariots actually in use is suggested by the strip of clay which secures the quiver in this model. The seat for the driver is of ample width, and forms a cover beneath which things might be stowed away. Again, there is a suggestion of a step behind. The four wheels do not actually belong to this model, but are selected from a number of these found in the mound. Judging from the great number of the wheels found, the chariot must have been an extremely popular toy in ancient Kish.

The earliest example of a chariot found in sculpture in Mesopotamia is a representation of Eannatum in his war-chariot pursuing his enemies (about 3000 B.C.). Unfortunately, this scene is very fragmentary, and only the upper portion of the chariot is shown. Enough remains to show that it was very similar in appearance to the model in Fig. 6 and that a quiver was attached.⁵⁷ It is much to be regretted that nothing is left of the animals that drew the chariot. The Sumerians called the chariot GISH GIGIR, the prefix GISH denoting that the object in question was made of wood. The animals first employed for draught work were probably asses—an animal well-known to the Sumerians from the earliest times. It is probable, however, that the horse was also known, for two models in clay strongly suggesting the horse were found in the "A" mound, and they are clearly of the same date as the chariots. In a seal of early Assyrian date which shows a two-wheeled chariot of ordinary form, except that each wheel has four spokes, the draught animal strongly resembles a bull.⁵⁸ This is reminiscent of the use of oxen for traction in India and elsewhere; in India they are said even to be capable of trotting for considerable distances. The name for a chariot in Assyrian is NARKABAT, and in Egyptian, MARKABATA, the latter being borrowed from the former. Neither the chariot nor the horse is mentioned in Egypt before the Hyksos invasion, and it is said that they were introduced there from Western Asia, having originally been brought from Iran.⁵⁹ These vehicles were probably very cumbersome, and their mobility was not improved by employing the use of a pair of animals to draw them. This, however, was doubtless necessary owing to the softness of the ground over which they traveled. One of these pottery wheels

was found in the filling of grave 127 and on a level with the bones. It did not, however, belong to the grave, which was undisturbed, and must have been thrown in with the filling—a proof that the wheel was of the same or even earlier date than the graves.

The two pieces of moulding with a design of overlapping seals or petals shown in Plate XLVI, Fig. 4A, are made of pottery. The first was found .50 m below the surface at the summit of mound "A," and is 1.50 cm thick (Reg. No. 2526; Field). The other piece is 1.90 cm thick, and was found close to the top of the footing of courtyard 6 at a depth of 2 m below the surface of the upper part of the mound (Reg. No. 2755; Oxford). Both pieces of pottery are exceptionally well-made and are cut, not moulded. The back is flat in each case, and they seem to be part of the decoration of a wall, for they are too large to be parts of a dress of a statue. From the great depth at which the second piece was found it would seem that they once formed part of the decoration of the palace.

A primitive pottery figure appears in Plate XLVII, Fig. 1, with pinched nose and flat round pellets for eyes. The mouth is just indicated. It is wearing a rolled turban over what appears to be a wig. The arms are roughly made, and were never complete; the lower portion of the body is wanting. This figure is 8.10 cm high and 7.40 cm wide. It was found .50 m below the surface of filling of chamber 52 of the palace (Reg. No. 1622; Field). Fig. 2 of this plate represents a baked pottery figure of a monkey sitting with his legs crossed. Two round pellets of clay were added to represent the eyes, but nose, mouth, and ears are modelled. There is a beard a portion of which is wanting, and the hair is parted along the middle of the top of the head. This figure is 7.10 cm high. It was found 40 cm below ground, and presumably belongs to the period of the graves (Reg. No. 1623; Oxford). Fig. 3 is also of baked clay and fragmentary, being now 58 cm high. It may represent a horse or donkey, for there is a mane between the ears and partly down the back. It is evidently a child's toy, but made by someone with experience in modelling. It was taken 1 m below the surface of the mound (Reg. No. 2199; Field). The baked clay model (Fig. 4) is 6.60 cm long. Its ears and tail suggest a dog, and there is a hole through the nose for a cord with which to pull it along. The level at which it was found was not ascertained (Reg. No. 1323; Baghdad). Fig. 5 of Plate XLVII is 48 cm high, and stands upright with arms and legs outspread. It is the second figure of a man found; but it is roughly made, and the only recognizable feature in its face is the nose. This was discovered in a debris-filled chamber and probably belongs to the same period as the graves (Reg. No. 2357; Field). Fig. 6 is 8.60 cm long from nose to tail, and was found close to and outside the foundations of the walling marked in the skeleton plan of the palace. It represents either a donkey or a horse, the latter being the more probable, or a plumed tail is indicated. The thick mane over the neck should be noticed. The nose is bored through to take a cord. This pottery animal may have been used with a chariot model (Reg. No. 2369; Field). Fig. 7 obviously represents a ram, and is a well-modelled figure in excellent condition. It is 4.20 cm long, and was found 2 m below the surface at the summit of the mound (Reg. No. 2471; Field).

Of the two pottery models in Plate XLVII, Fig. 9, the one on the left represents a bird, probably a pigeon, and is 6.70 cm high. It is well-modelled and of solid clay. The feathers and wings are roughly represented by inside lines, and the eyes are formed of pellets of clay. This model was found at a depth of 2 m on the southern side of the mound, and presumably belongs to the same period as the burials (Reg. No. 1030; Oxford). The figure on the right was found at some depth on the southern slope of the mound, and is 4.60 cm long. It apparently represents a hedgehog or pig whose spines or bristles are indicated by a few incised lines on the back (Reg. No. 1114). The upper figure in Plate XLVII, No. 10, represents a bird 43 cm high. The legs form a round plinth whose base is slightly hollow. The head is slightly chipped, but the figure is otherwise perfect. It is made of somewhat coarsely modelled pottery and is hollow with a pellet inside to make it rattle. It was found 3 cm below the surface above chamber 9 of the palace (Reg. No. 2699; Oxford). The figure below it is a model of an unusually well-nourished ram whose fleece is represented by incised markings down the sides of the body, springing from a parting along the middle of the back. The eyes are incised. The animal is hollow and rattles when shaken, so there can be no doubt that it was a child's toy. It is 9.80 cm long, 6.95 cm high, and was found 40 cm below the surface of the highest portion of mound "A" (Reg. No. 2384; Field).

In Plate XLVII, Fig. 11, are seen two models undoubtedly intended to represent horses. The upper one was picked up on the mound by one of the basket-boys who said he found it on the surface of the ground. The thick, plumed tail and the forelock and mane are obviously those of a horse (Reg. No. 2925; Oxford). The lower figure is 6.60 cm in length, and its long head and mane, short ears, and thick tail also prove it to be a horse. It was found in the small room enclosed by the walling at the top of and in the centre of the mound and therefore almost certainly belongs to the period of the graves (Reg. No. 2129; Field).

NOTES

- ¹ On the archaeology and mythology of the seals, see the writer's *Excavations at Kish*, pp. 79-85.
- ² LANGDON, *Babylonian Wisdom*, p. 79.
- ³ LANGDON, *Oxford Editions of Cuneiform Texts*, Vol. II.
- ⁴ Plate XXIV, Fig. 2, shows this valley clearly. The dump in the foreground is a portion of the "A" mound.
- ⁵ The word Mesopotamia is to be interpreted in its widest sense.
- ⁶ For a discussion of this name, see LANGDON, *Excavations at Kish*, chap. iii.
- ⁷ DE GENOUILLAC, *Premières recherches archéologiques à Kich*, p. 28.
- ⁸ The mean Magnetic Declination for the neighborhood of Hillah in September, 1921, was 2° 30' E. The annual change is about +7' or 8', so that in December 1923 it was 2° 44' E. (approx).
- ⁹ This is a drawing by Botta of a sculptured scene recovered from the palace of Sargon II at Khorsabad.
- ¹⁰ A pavement of a similar thickness has been found in another portion of the palace (chamber 45). It was probably difficult to bring earth in from the outside to level a floor, and instead, the thickness of the paving was increased in places to level up the sunken portions.
- ¹¹ Those paved with unburnt bricks may have been robbed of a layer of burnt brick.
- ¹² A passage of this description paved with mud brick, if open to the sky, would become a morass in wet weather. It is possible, but improbable, that this passage was once removed for other purposes. It should be remembered, however, that it is very difficult to remove a burnt-brick paving, however loosely it may be set, without leaving traces behind.
- ¹³ LANGDON, *Oxford Editions of Cuneiform Texts*, Vol. II, p. 14.
- ¹⁴ It should be remembered, however, that only the lower parts of the walls remain and that the weight of the walling above would have consolidated the lower portions.
- ¹⁵ See Plate XXXII, Fig. 1, for illustrations of burnt bricks found in the palace. The brick on the immediate left is one that had been accidentally burnt in the firing of the palace. It shows the extreme convexity of the sun-dried bricks as compared with those that were baked.
- ¹⁶ Pottery of the same shape and material was recovered from a Greek burial close by.
- ¹⁷ Exactly similar furnaces have been found at Nippur. See FISHER, *Excavations at Nippur*, Plate XIII, and MEISSNER, *Babylonien und Assyrien*, p. 234 and Fig. 96. I do not agree on the point that the material to be baked was placed on the floor of the furnace as represented in Fisher's diagrams. In the furnaces found at Kish, the floor space of 3.70 x 75 m would hardly be sufficient to contain much pottery.
- ¹⁸ The absence of pottery and other objects is perhaps connected with the fact that so many of the chambers were robbed of their burnt-brick pavements.
- ¹⁹ The same kind of cue is worn by the god Ningirsu in the Stele of the Vultures. Also compare two statues found by Andrae in the H and G temple at Assur. Frankfort (*Studies in Early Pottery of the Near East*, pt. 1, pp. 88-89, Royal Anthropological Institute) suggests North Syria or Anatolia as possible sources of these cues.
- ²⁰ The arrangement of the beard and the technique of the cheek-bones are reminiscent of the god Ningirsu on the Stele of the Vultures, though the plaque in question is more primitive in type.
- ²¹ *Antiquaries' Journal*, Vol. IV, Plate XLIV, Fig. 4.
- ²² For an illustration of a somewhat similar design in spirals see HANDCOCK, *Mesopotamian Archaeology*, p. 189. The object bearing the design is made of a mixture of clay and bitumen, and was found in the neighborhood of a building whose bricks bore the name of Entemena.
- ²³ *Excavations at Kish*, chap. x.
- ²⁴ HILPRECHT, *Explorations*, pp. 474-475; also HANDCOCK, *Mesopotamian Archaeology*, p. 182.
- ²⁵ La Stèle des Vautours, Plate II. In the same scene, but above it, the king is carrying a staff or wand of a straighter form, but, unfortunately, part of this is broken.
- ²⁶ For a similar figure, but of larger size, see HANDCOCK, *Mesopotamian Archaeology*, p. 234.
- ²⁷ Amen-em-heb, who accompanied Tutmosis III into Syria (about 1470 B.C.), speaks of that king's hunting a hundred and twenty elephants in the land of Niy for the sake of their tusks (*Zeitschrift Aeg. Sprache*, Vol. XI, p. 63).
- ²⁸ Meanwhile three of these cups have been restored in Field Museum. See LAUFER, *Ostrich Egg-shell Cups of Mesopotamia and the Ostrich in Ancient and Modern Times* (Field Museum, Anthropology, Leaflet 23, 1926).
- ²⁹ A species of Triton. A shell beaker very similar to the one illustrated, but with added ornamentation in the shape of figures of a monkey, a dog's head and a ram's head, found at Qau in Egypt and dated to the VIth dynasty. *Ancient Egypt*, pt. 2, 1924, p. 87.
- ³⁰ LANGDON, *Excavations at Kish*. Appendix by H. Dudley Buxton.

³¹ A very similar dish to one of these has been found at Susa (*Mémoires de la Délégation en Perse*, Vol. XIII, Plate XLIV, Fig. 4).

³² Both comb work and single line decoration are found on jars in burials 40, 47, 97, and 154, in each of which there were two handled jars.

³³ It is possible that these represent the stitching in leather work.

³⁴ A seven-toothed comb was used in the decoration of the jar found in burial 78, and on a jar from burial 126 a ten-toothed comb was used.

³⁵ In drawing the illustrations, it was impossible on account of the reduced scale to indicate the exact number of lines on some of the jars without creating confusion, and a smaller number was, therefore, drawn.

³⁶ ANDRAE, *Die archaischen Ishtar-Tempel in Assur*, p. 40, Fig. 16.

³⁷ OBERMAIER, *Der Mensch der Vorzeit*, p. 529, Fig. 346.

³⁸ *La Stèle des Vautours*, Plate XI.

³⁹ On the other hand, the square or rectangular shanks of some of the weapons and tools would by reason of their shape fit more tightly in a round aperture than a rounded shank would do. The edges of the shank would effectually prevent any tendency to twist or turn.

⁴⁰ It is interesting to note that knobkerries made by providing a short staff with a bitumen head are commonly carried and used by the present inhabitants of Mesopotamia. Practically every Arab has or carries one.

⁴¹ Compare these two battle axes with one found in Central Syria (PETRIE, *Tools and Weapons*, Plate LXXIV, No. 95).

⁴² NEWBERRY, *Beni-Hassan, I-IV*. A socketed axe is carried by a Syrian in a tomb scene of the XIIth dynasty (PETRIE, *Tools and Weapons*, Plate VI, No. 174).

⁴³ PETRIE, *Tools and Weapons*, Plate XV, No. 57.

⁴⁴ *La Stèle des Vautours*, Plate XI.

⁴⁵ *Catalogue*, p. 389; also HANDCOCK, *Mesopotamian Archaeology*, p. 310, Fig. 78.

⁴⁶ Compare also the weapon held in the hand of a figure of Gilgamesh found at Khorsabad (GRESSMAN, *Texte und Bilder*, p. 109, Fig. 225).

⁴⁷ Allowing for the length of this rivet and the thickness of the blades, each 2 mm, the total thickness of the implement would be about 11 mm. No hole to fit this rivet was to be found in the corresponding blade, but the apparent absence of one cannot be accounted for by corrosion; the patina so formed would have filled the hole. These particular blades are illustrated in Plate XXXIX, No. 6, at the bottom of the illustration.

⁴⁸ The scimitar was not known in Egypt until Hyksos times. It is possible that this again was a Babylonian invention (PETRIE, *Tools and Weapons*, Note E 23). There is an Assyrian scimitar in the British Museum, dated 1800 B.C., which has a double curve.

⁴⁹ BANKS, *Bismya*, p. 309.

⁵⁰ *Tools and Weapons*, p. 51.

⁵¹ Stamp seals of a similar type were found at Susa and dated to the end of Period I (*Mémoires de la Délégation en Perse*, Vol. XIII, p. 60).

⁵² It should be remembered that in every case the impression of the seal is being considered, not the seal itself.

⁵³ A very similar scene to this one was found at Bismya (BANKS, *Bismya*, p. 275). It probably represents a man ploughing, and the same scene, a man holding the tail of his animal and goading it on may be seen in Iraq at the present day.

⁵⁴ *Die archaischen Ishtar-Tempel in Assur*, Plate LX.

⁵⁵ A similar use was made of notched flints during the XIIth dynasty in Egypt. A piece of wood cut to represent a jaw-bone was found at Kahun, and notched flints had been inserted in the slotting of the inner edge with the aid of some bituminous composition. From the shape of this sickle it would appear that the archaic form of sickle in Egypt, at all events, was a jaw-bone with the teeth still in it (see PETRIE, *Kahun*).

⁵⁶ *Mémoires de la Délégation en Perse*, Vol. XIII, Plate XLIV, No. 4.

⁵⁷ *La Stèle des Vautours* (1909), Plate XI.

⁵⁸ HANDCOCK, *Mesopotamian Archaeology*, p. 305.

⁵⁹ HALL, *Ancient History of the Near East*, p. 213.



PLAN OF PALACE "A"



SKELETON PLAN OF PALACE SHOWING LATER BUILDINGS AND POSITIONS OF GRAVES.

SECTIONS OF PLAN OF PALACE "A" KISH

ZERO LEVEL



SECTION ALONG LINE N-O

ZERO LEVEL



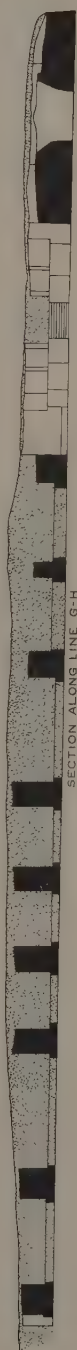
SECTION ALONG LINE L-M

ZERO LEVEL



SECTION ALONG LINE J-K

ZERO LEVEL



SECTION ALONG LINE G-H

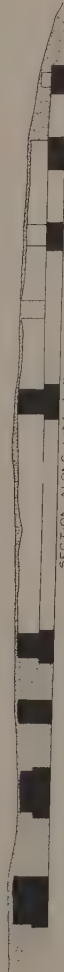
ZERO LEVEL

EXPLANATION

IN ALL SECTIONS BROKEN LINES MARKED ZERO LEVEL
ARE FIVE METRES ABOVE ZERO DATUM LINE

SECTION ALONG LINE F-F

ZERO LEVEL



SECTION ALONG LINE E-D

ZERO LEVEL



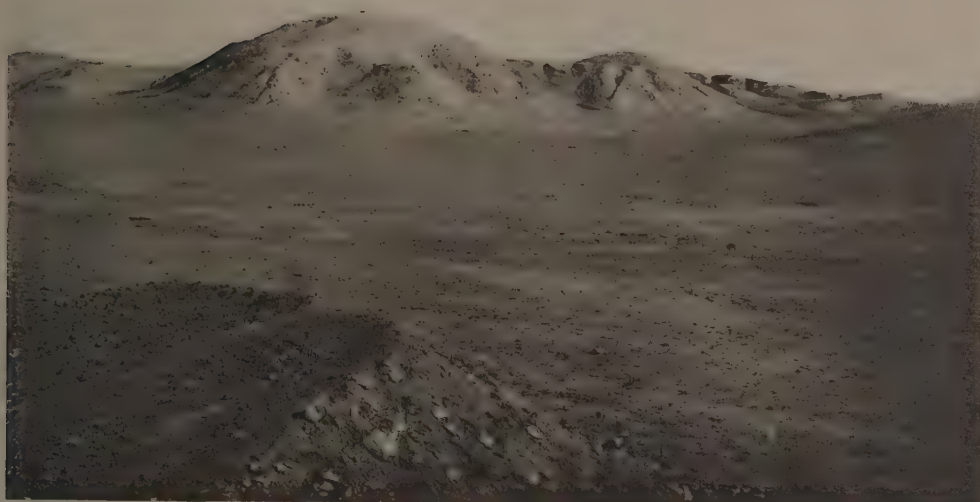
WESTERN FACADE A-B

SECTIONS OF PALACE "A" KISH.

PALACE "A" KISH.



1. VIEW OF EXCAVATIONS AT "A" MOUND FROM ZIGGURAT AT INGHARRA.

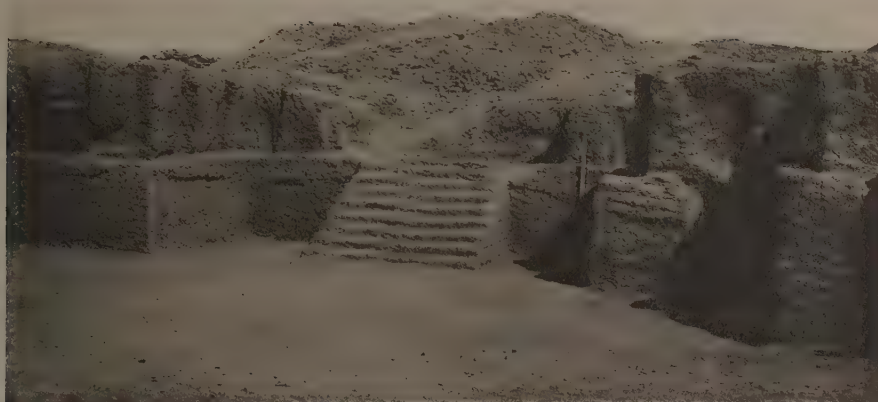


2. VIEW OF TWIN ZIGGURATS FROM "A" MOUND.



3. STAIRWAY OF PALACE "A" SHOWING LATER FLANKING WALL OF BURNT BRICK.

THE STAIRWAY OF PALACE "A" KISH.



1. STAIRWAY OF PALACE "A" FACING N. N. W.



2. STAIRWAY OF PALACE "A" FACING N. E.



3. RECESSED FLANKING TOWER FACING N. E.

THE COLONNADE OF PALACE "A" KISH.



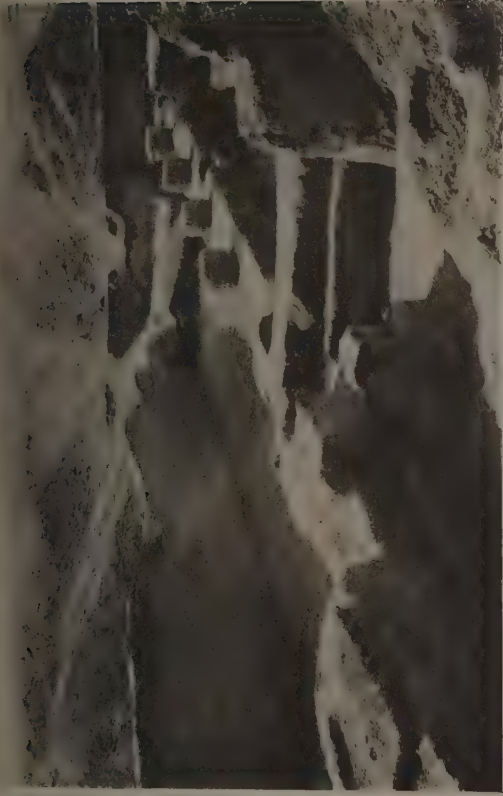
1. COLONNADE OF PALACE FACING S. W.



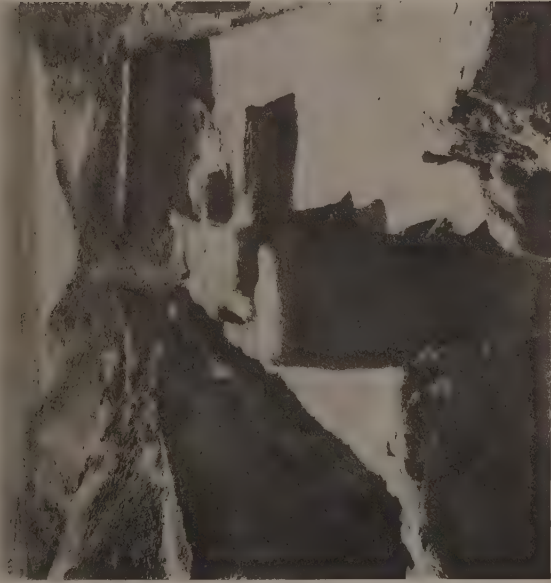
2. COLONNADE OF PALACE SHOWING STAIRWAY IN DISTANCE FACING N. E.



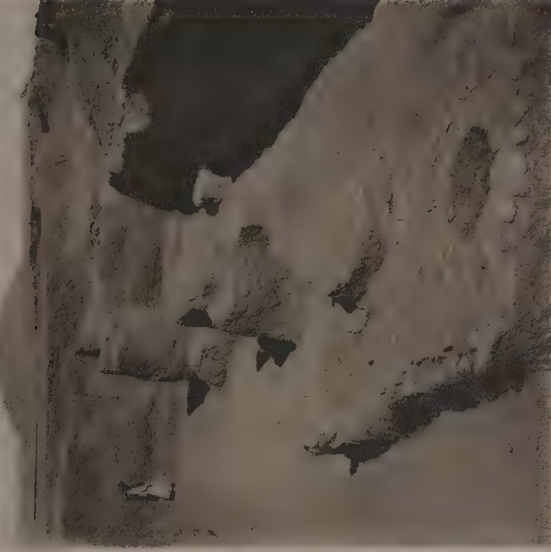
3. PORTION OF FAÇADE OF PALACE SHOWING MOUNDS OF INGHARRA IN DISTANCE FACING N. N. E.



1. VIEW OF COLONNADE OF PALACE FACING S. S. E.



2. PILLARED HALL (NO. 46) FACING S. W.



3. PILLARED HALL SHOWING BASIN IN FOREGROUND FACING N. E.

COLONNADE AND PILLARED HALL OF PALACE 'A' KISH.



1. BUTTRESS AGAINST FAÇADE OF PALACE.

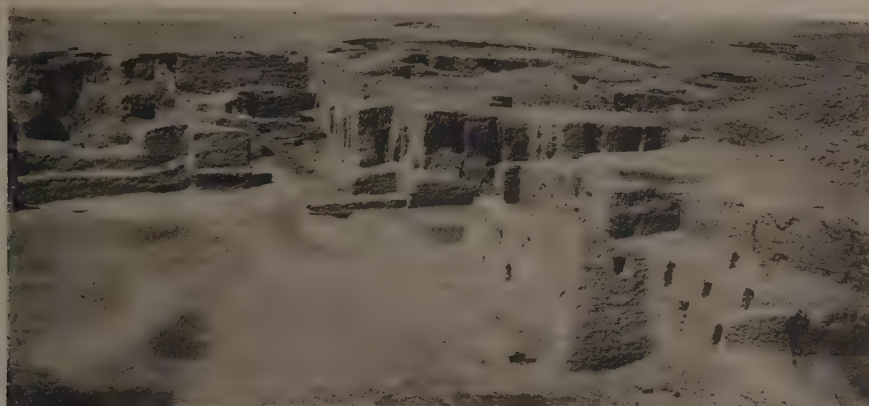


2. BUTTRESS SHOWING ROUGHNESS OF WORK.



3. CLOSE-UP OF BUTTRESS SHOWING BRICK BLOCKING OF NICHES.

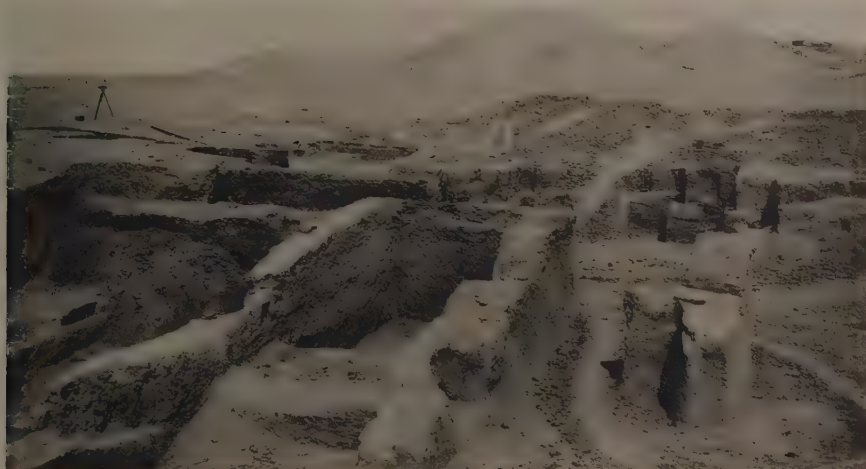
PARTIAL EXCAVATIONS OF PALACE "A" KISH.



1. PARTIAL CLEARANCE OF FAÇADE OF PALACE.



2. CLEARANCE OF COLONNADE AND CHAMBERS BEHIND PALACE.



3. STAIRWAY ENTRANCE TO PALACE IN PROCESS OF BEING CLEARED,
SHOWING LATE WALLING-IN OF FOREGROUND.

VARIOUS CONSTRUCTIONS IN PALACE 'A' KISH.



1. REMAINS OF BRICK KILN IN ONE OF NORTHERN CHAMBERS OF PALACE.

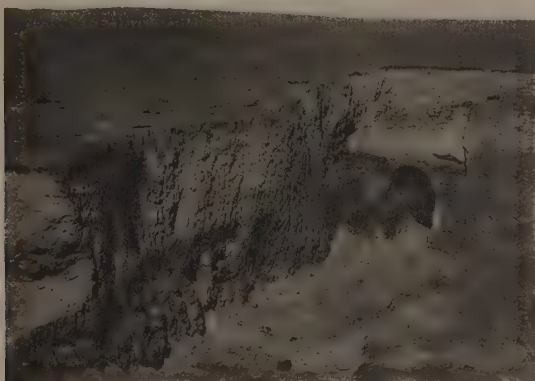


2. N. W. CORNER OF COURT 6 SHOWING ENGAGED COLUMN OR BUTTRESS.



3. OUTSIDE OF NORTH WALL OF PALACE SHOWING FOOTING AND BUTTRESSES FACING E. S. E.

VARIOUS CONSTRUCTIONS IN PALACE "A" KISH.



1. ENTRANCE OF ONE OF THREE KILNS ON WESTERN SIDE OF PALACE.



2. CHAMBER 30 SHOWING BRICK-PAVING AND VATS AT ONE END.

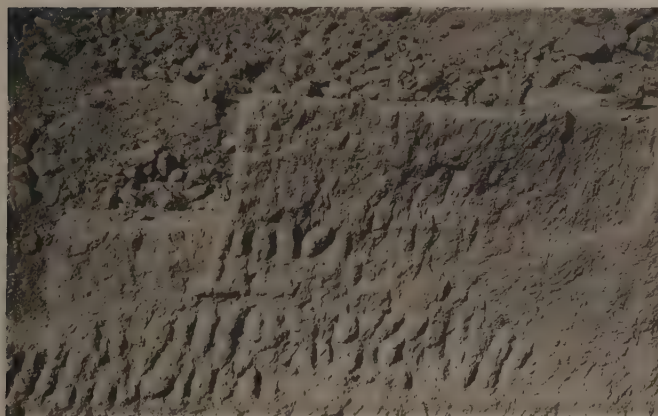


3. HEARTH IN CHAMBER 15.

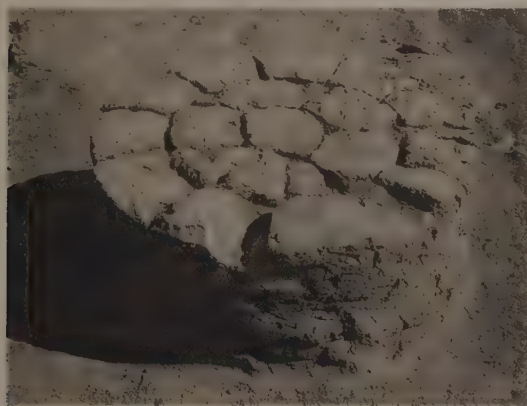
DETAILS OF BRICKWORK.



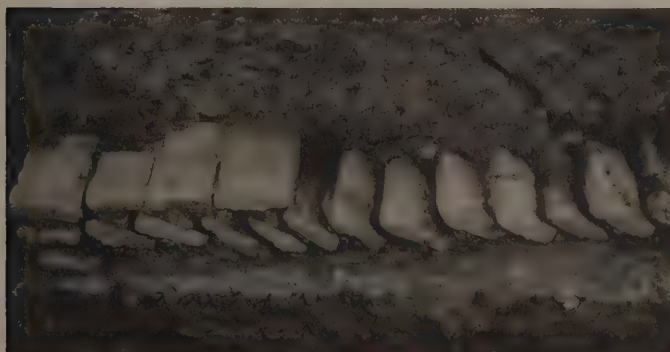
1. BURNT BRICKS SHOWING BRICKMAKER'S MARKS.



2. PORTION OF A WALL SHOWING BRICKS LAID ON EDGE.



3. COLUMN MADE OF SPECIALLY MADE BRICKS.



4. PAVEMENT OF CHAMBER 45 SHOWING METHODS OF LAYING BRICKS.

BUTTRESS IN ANNEX. EXCAVATION IN PROGRESS. PALACE "A" KISH.



1. BUTTRESS INSIDE OUTER WALL OF ANNEX.

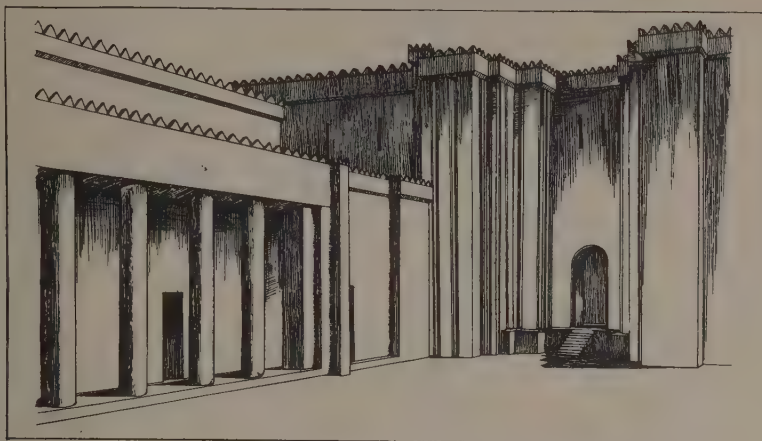


2. CLEARING THE COLONNADE.

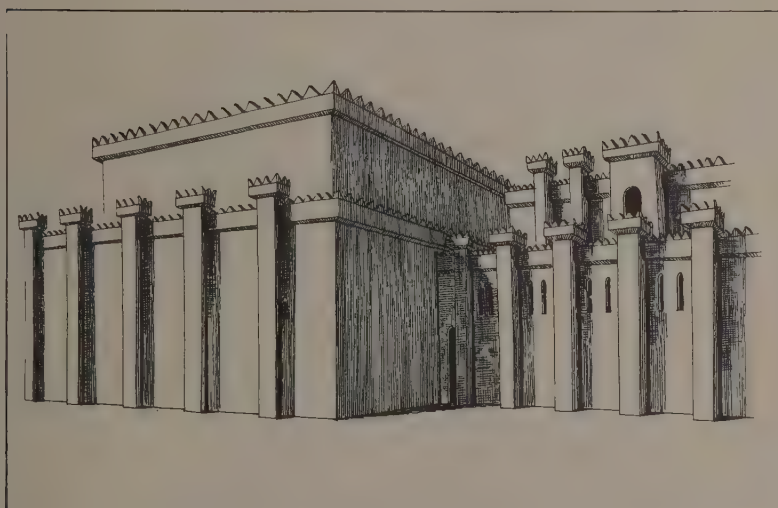


3. MEN AT WORK CLEARING COURTYARD 6.

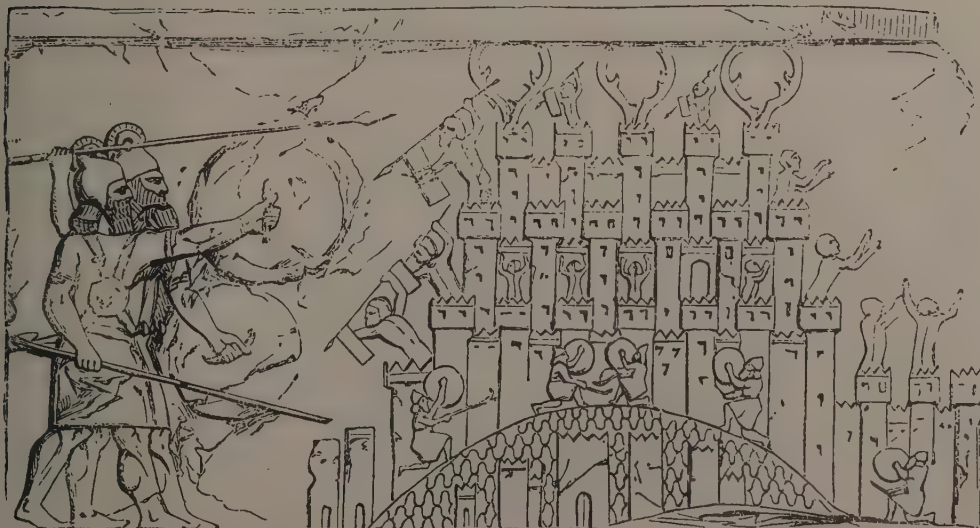
CONJECTURAL ELEVATIONS OF PALACE "A" KISH.



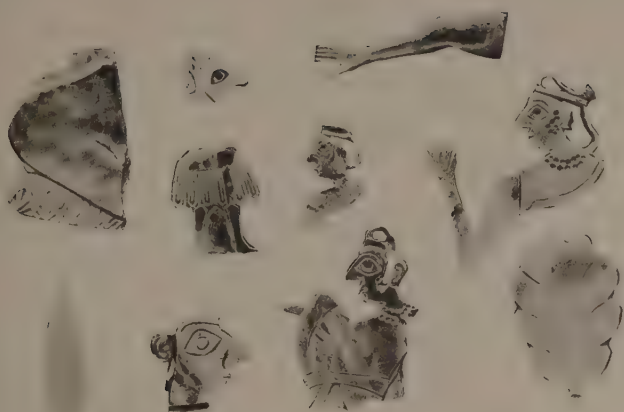
1. FAÇADES OF ANNEX AND EASTERN WING.



2. WESTERN SIDE OF PALACE.

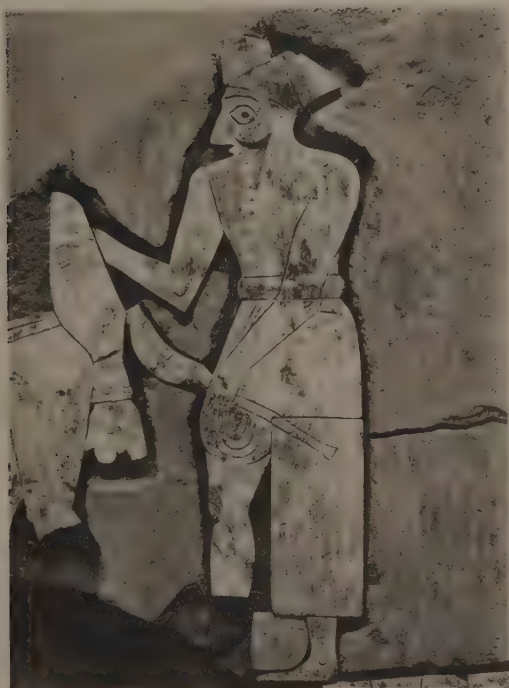


3. ASSYRIAN SCULPTURE, KHORSABAD (AFTER BOTTA, PLATE 68).



1

1531



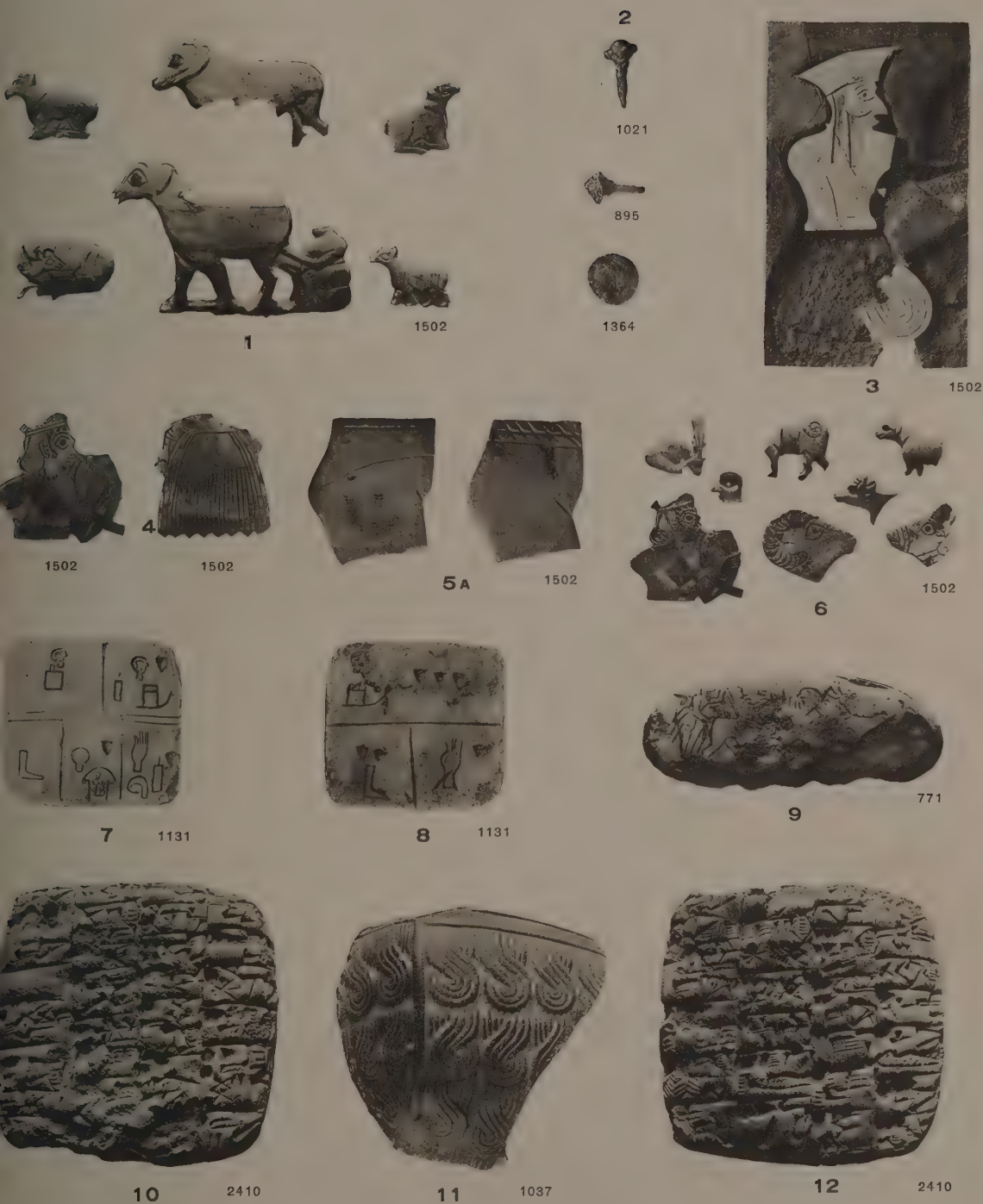
2

1501

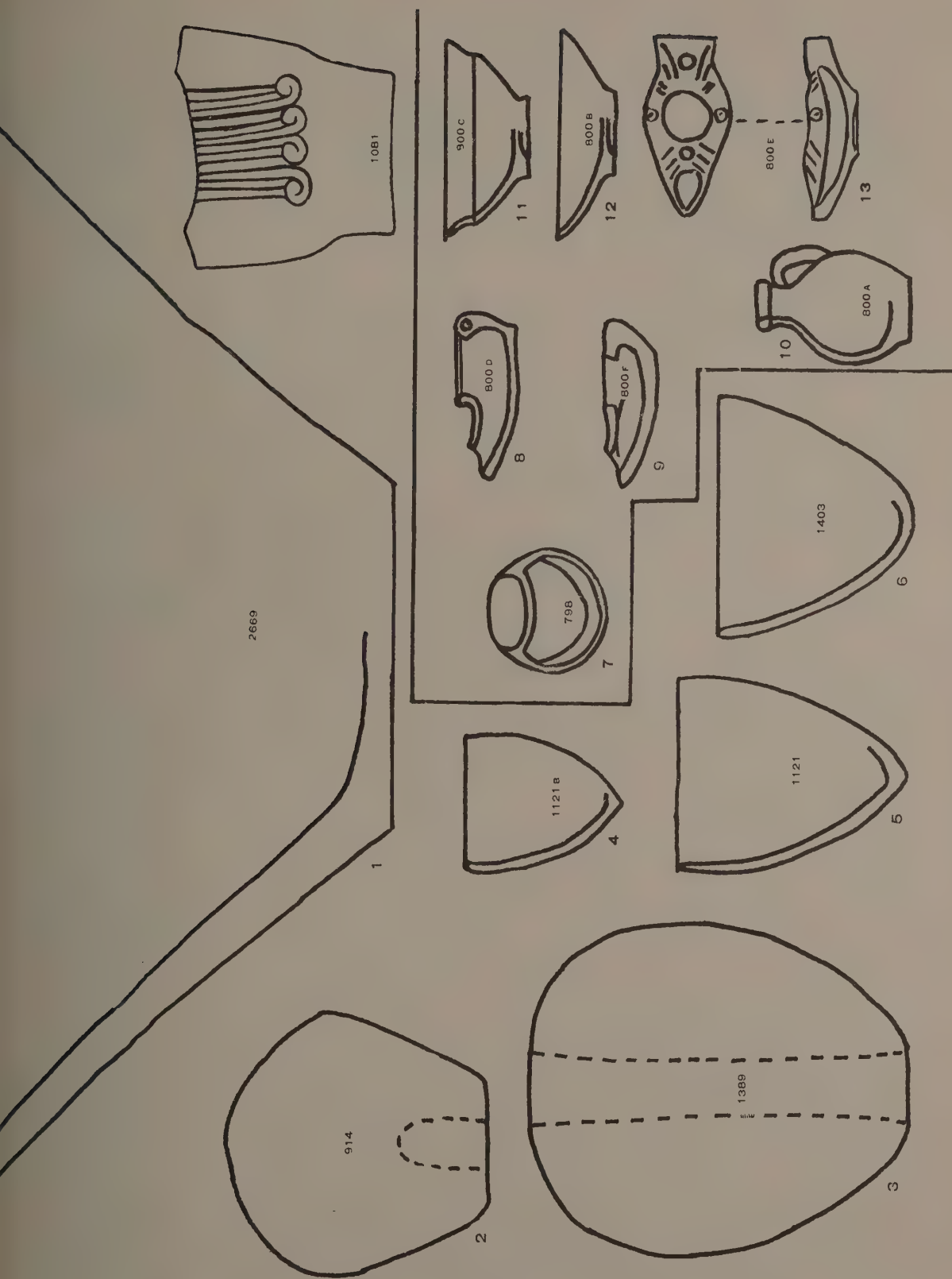


3

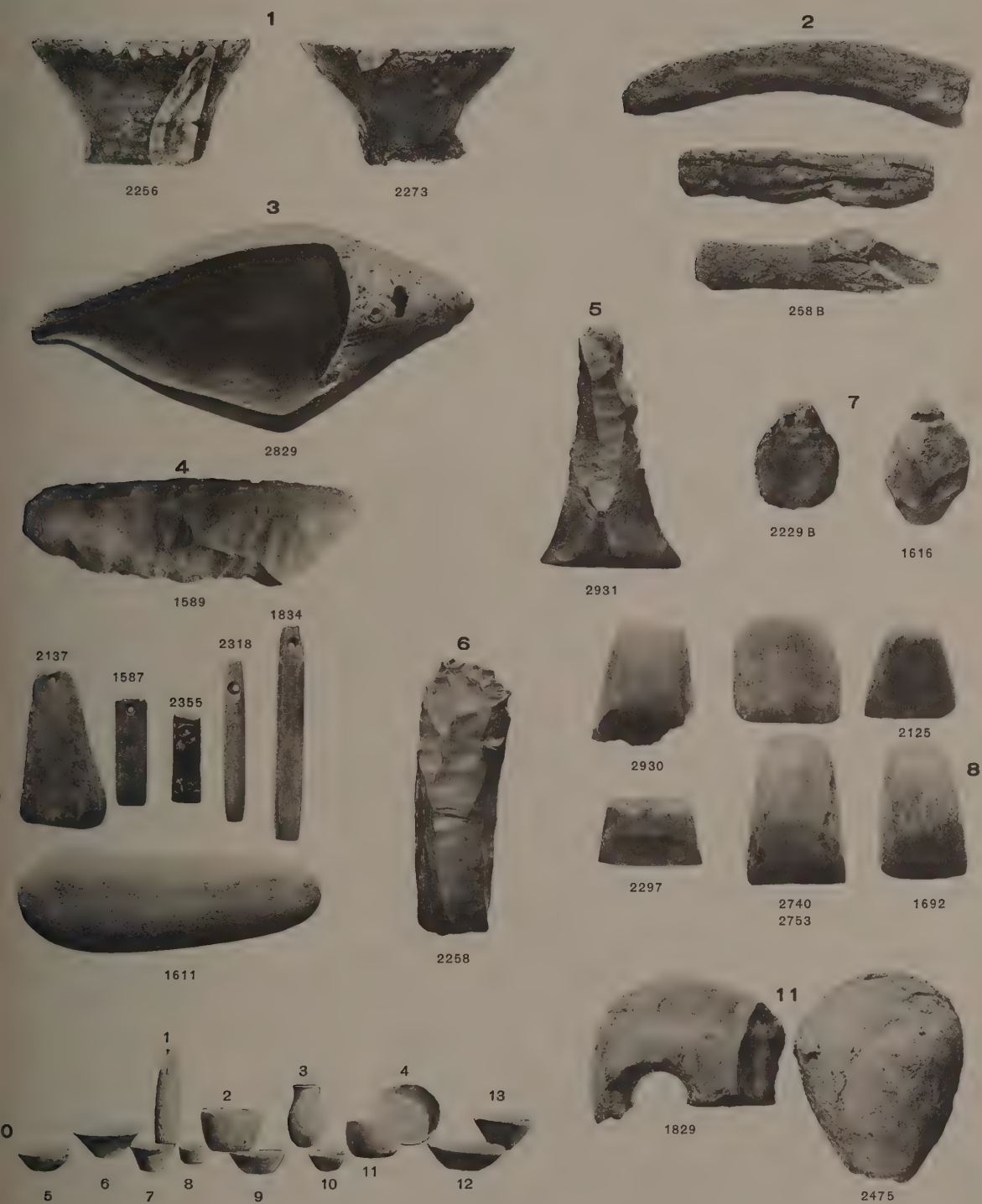
1501



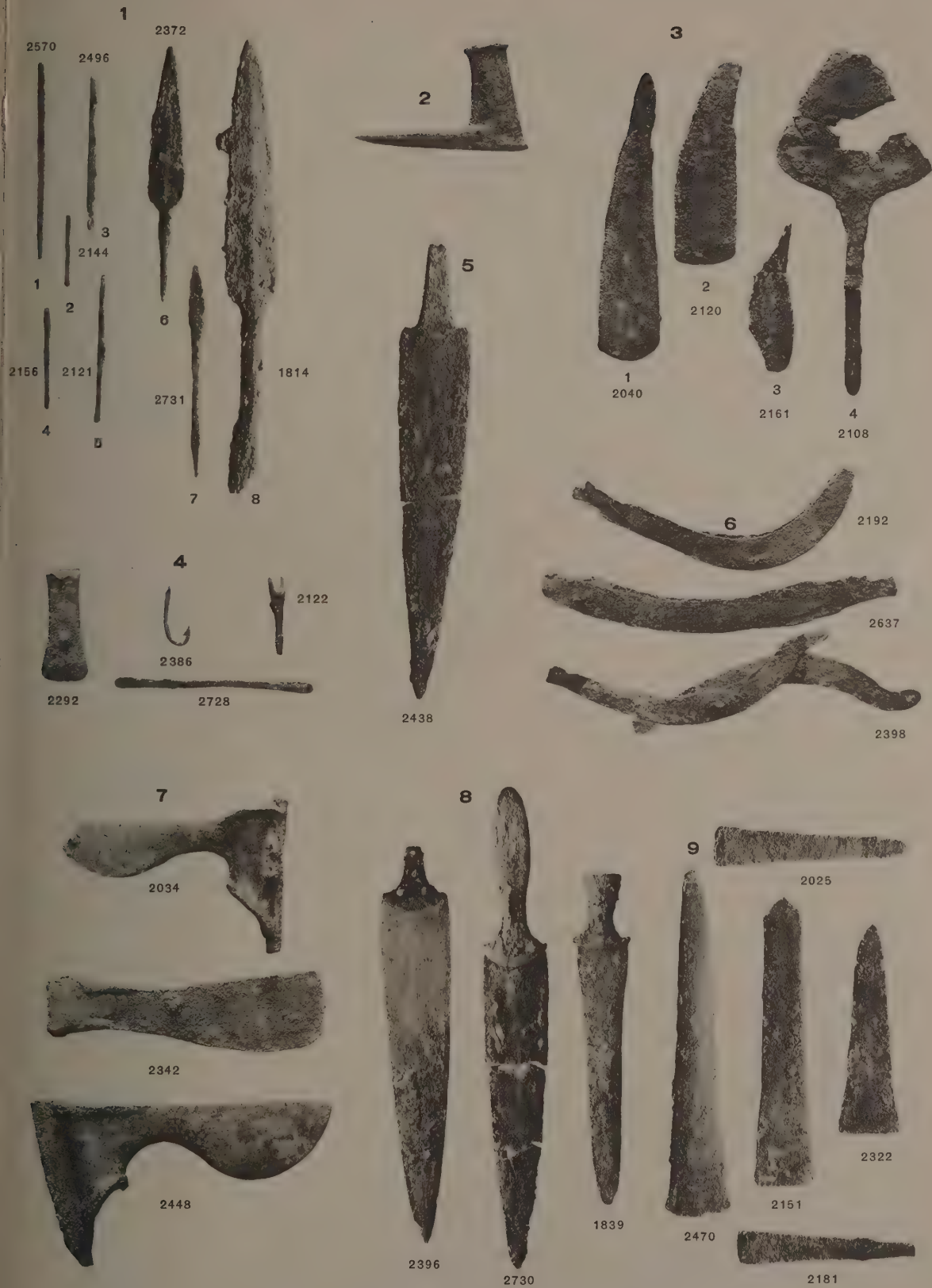
INLAY AND OBJECTS FROM PALACE "A" KISH.



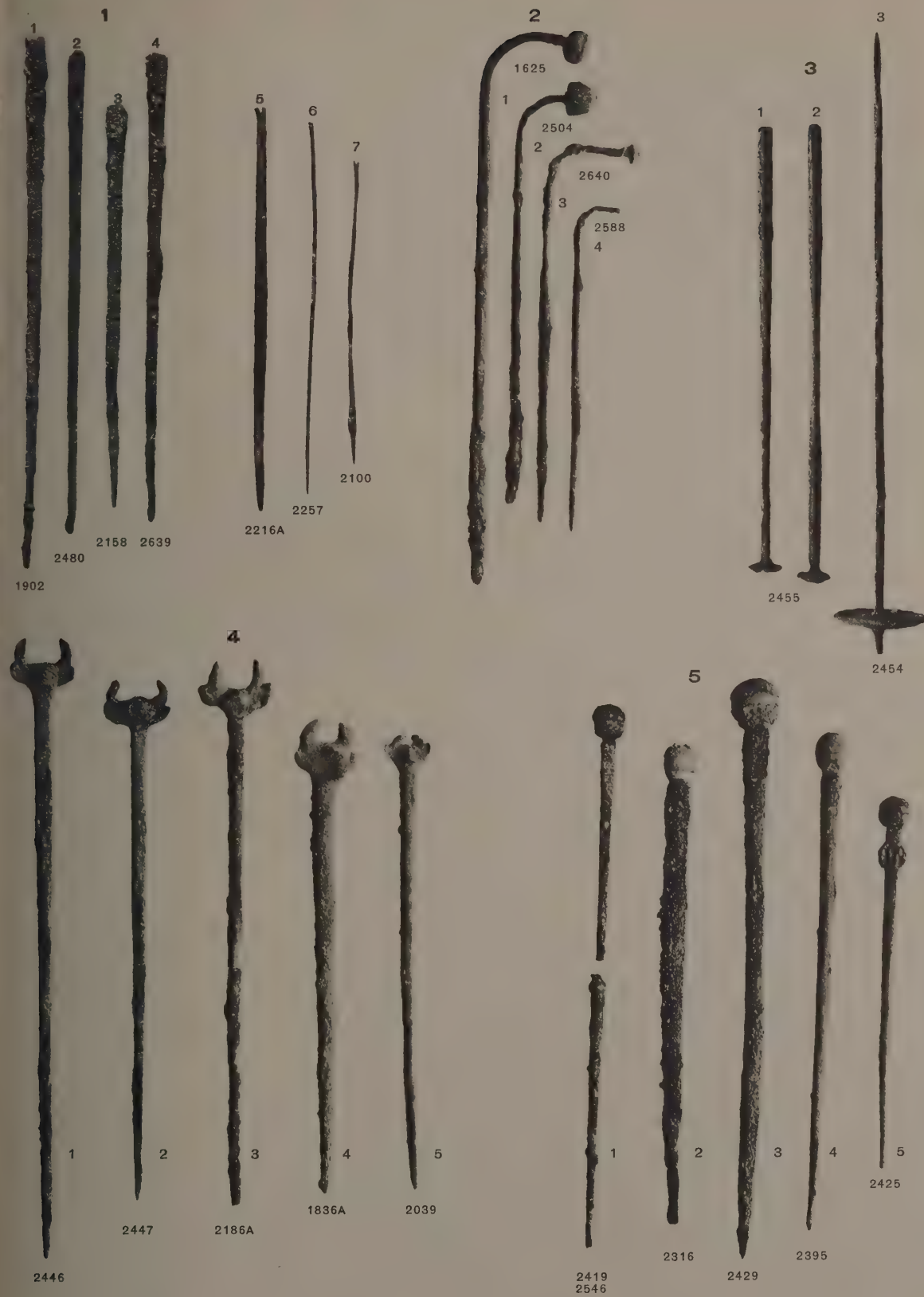
OBJECTS FROM PALACE "A" AND FROM GREEK BURIAL.



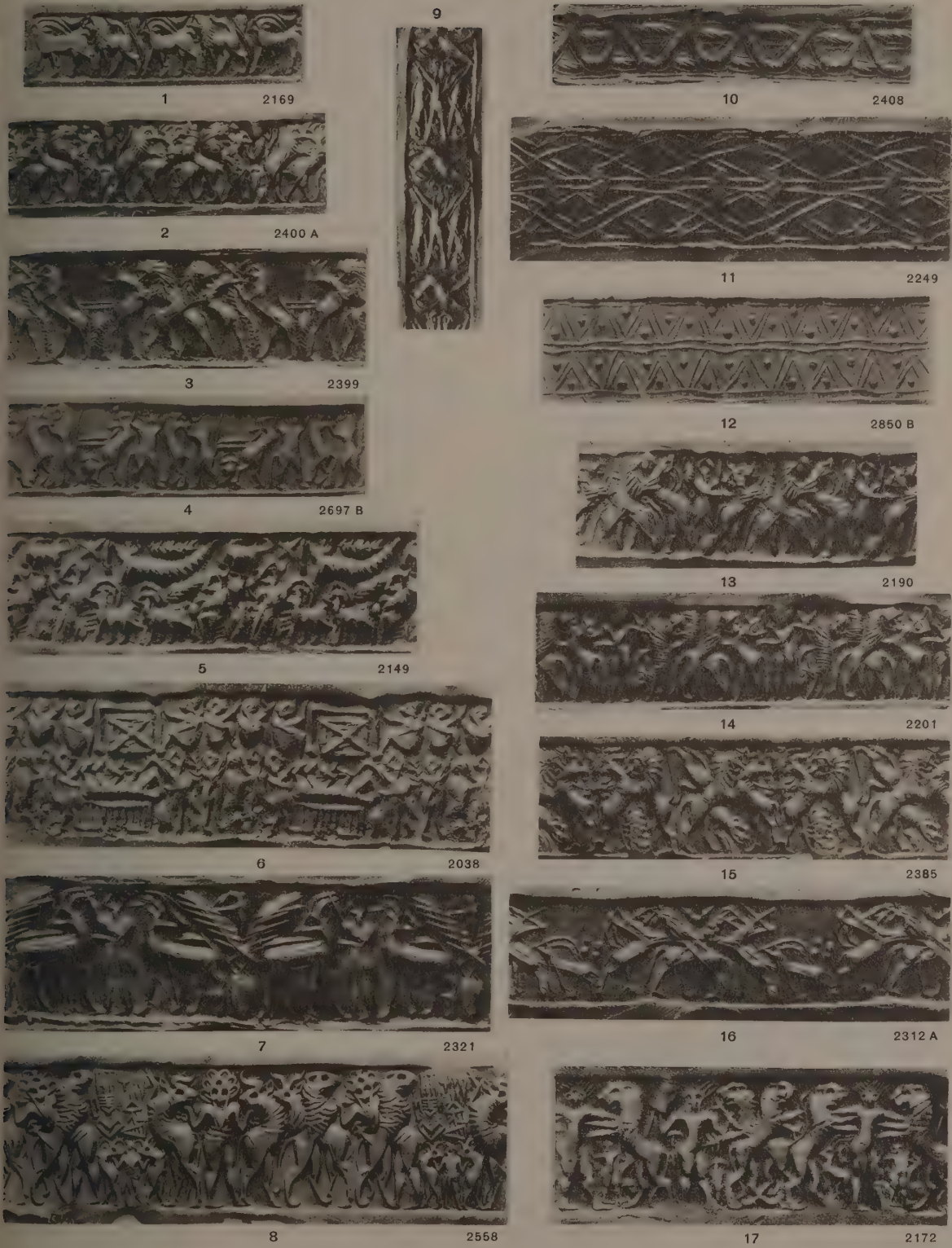
OBJECTS OF COPPER, SHELL, POTTERY, AND STONE FROM PALACE 'A' AND FROM GRAVES.



COPPER TOOLS AND IMPLEMENTS FROM MOUND "A" AND FROM GRAVES.



COPPER HAIR-PINS, NEEDLES, AND SPINDLES FROM GRAVES IN MOUND "A".



CYLINDER SEALS FROM MOUND "A" AND FROM GRAVES.



CYLINDER SEALS, STAMP SEALS, WEIGHTS, ETC. FROM PALACE "A" AND FROM GRAVES.



OBJECTS FROM MOUND "A" AND FROM GRAVES.



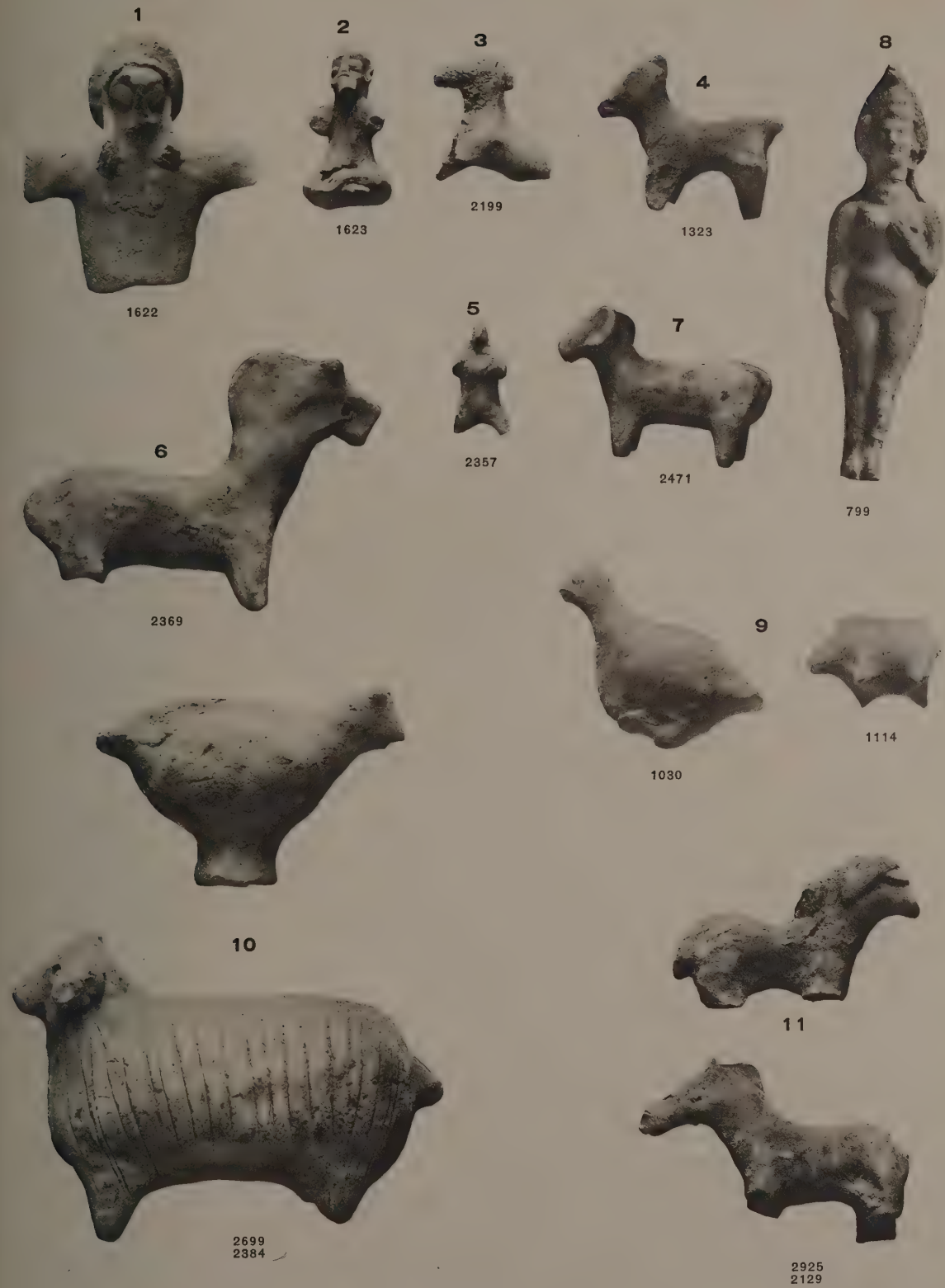
OBJECTS FROM MOUND "A" AND POTTERY FROM GRAVES.



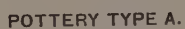
POTTERY AND POTTERY HANDLES FROM MOUND "A" AND FROM GRAVES.

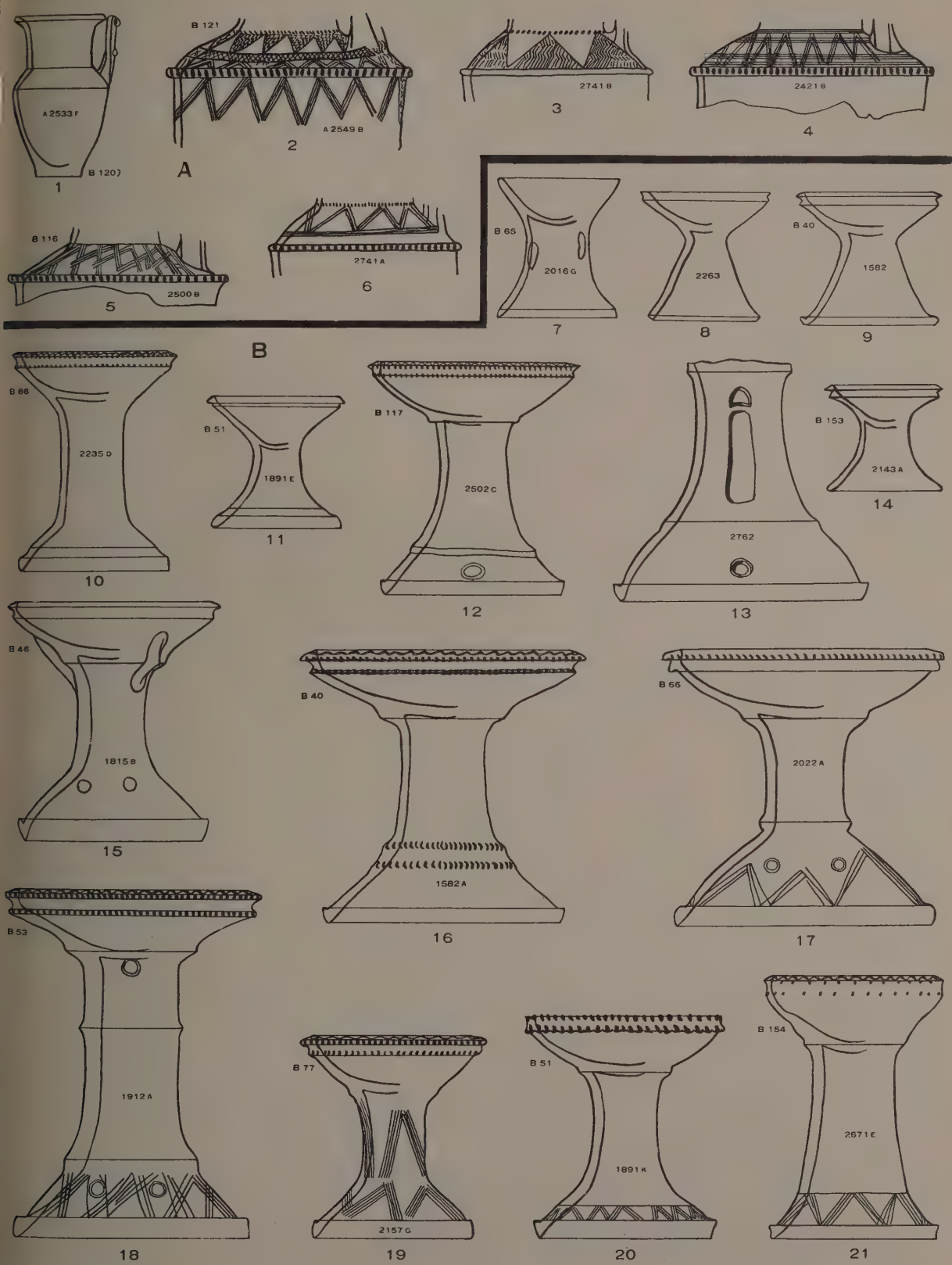


CHARIOT MODELS FROM MOUND "A"

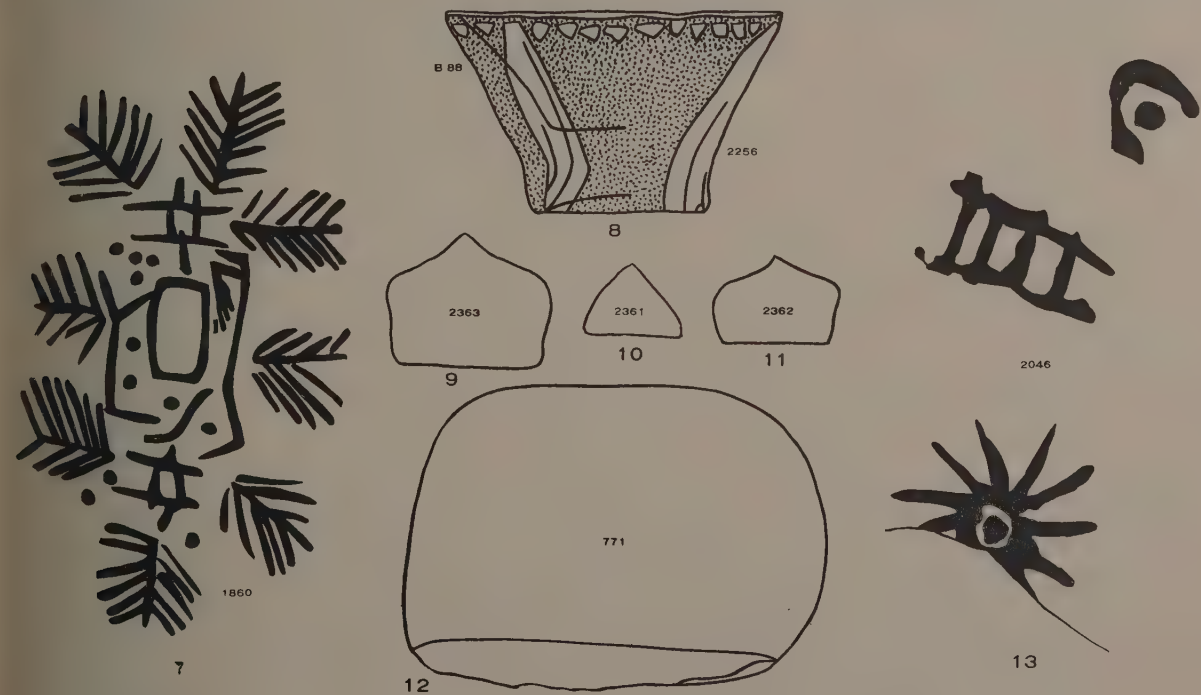
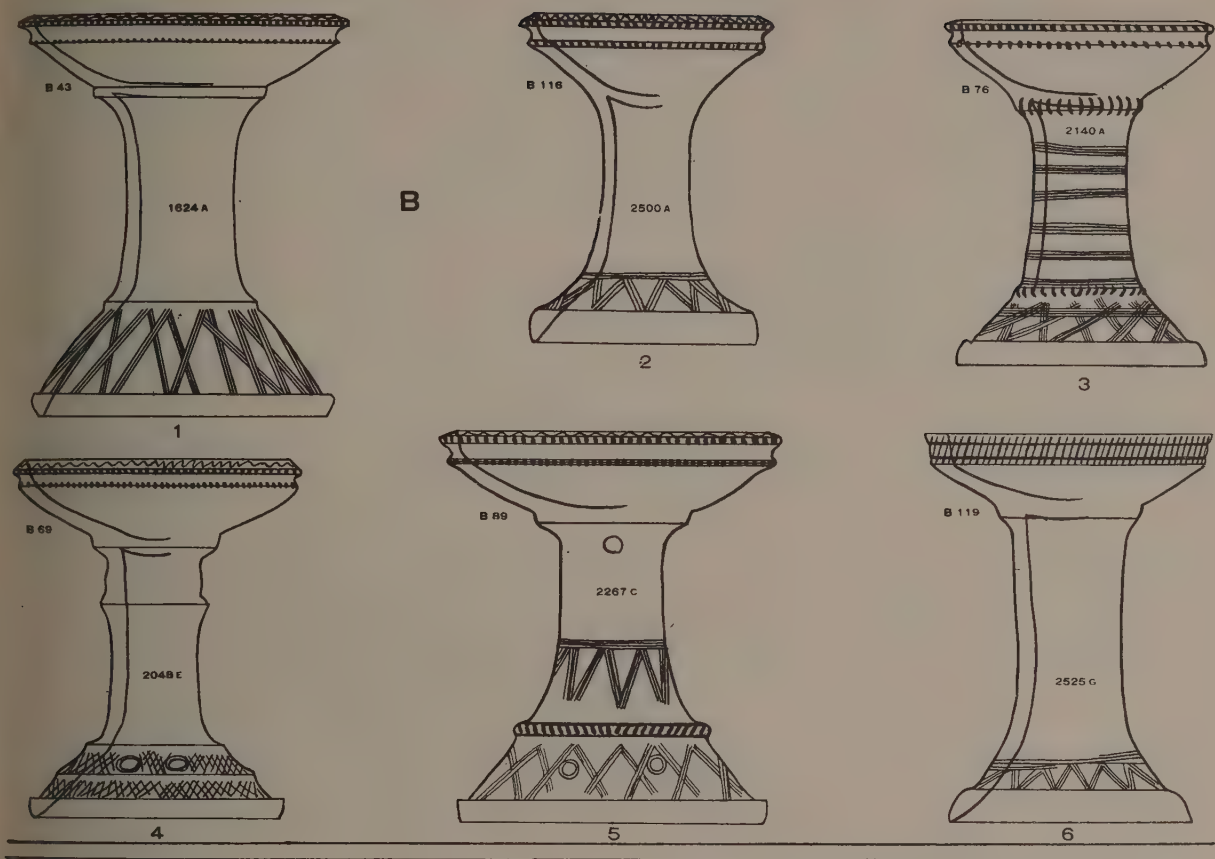


POTTERY FIGURES FROM MOUND "A"

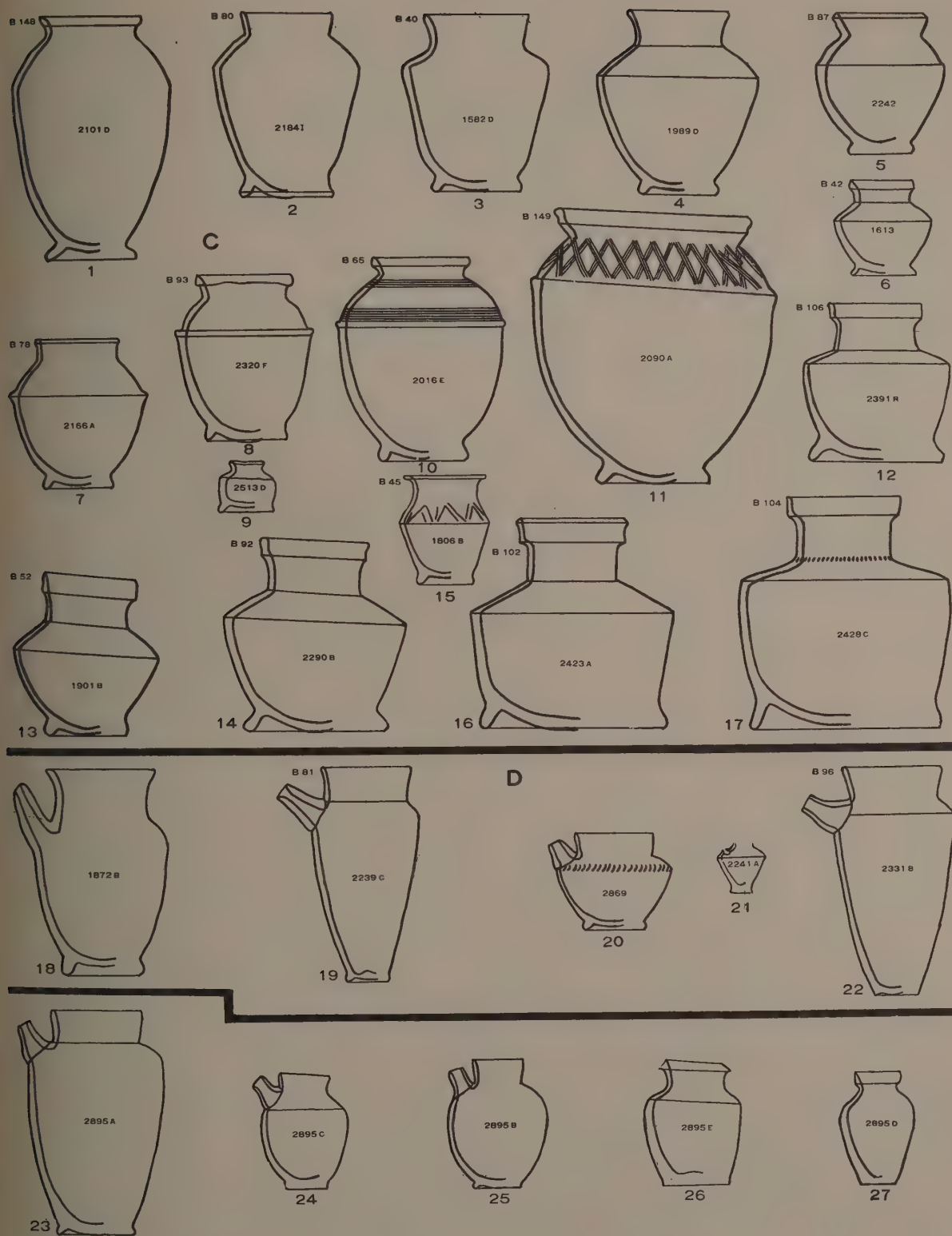




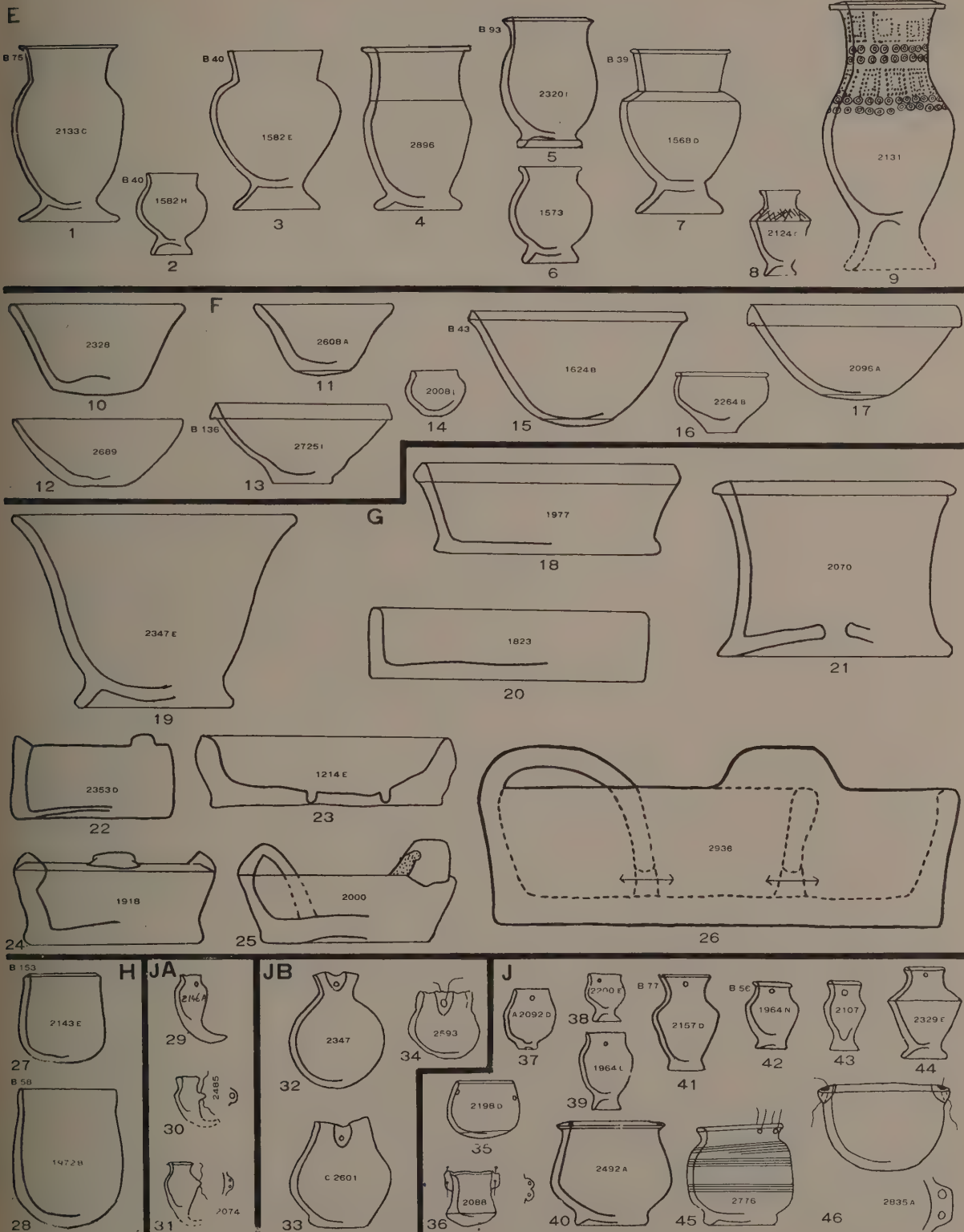
POTTERY TYPES A AND B.



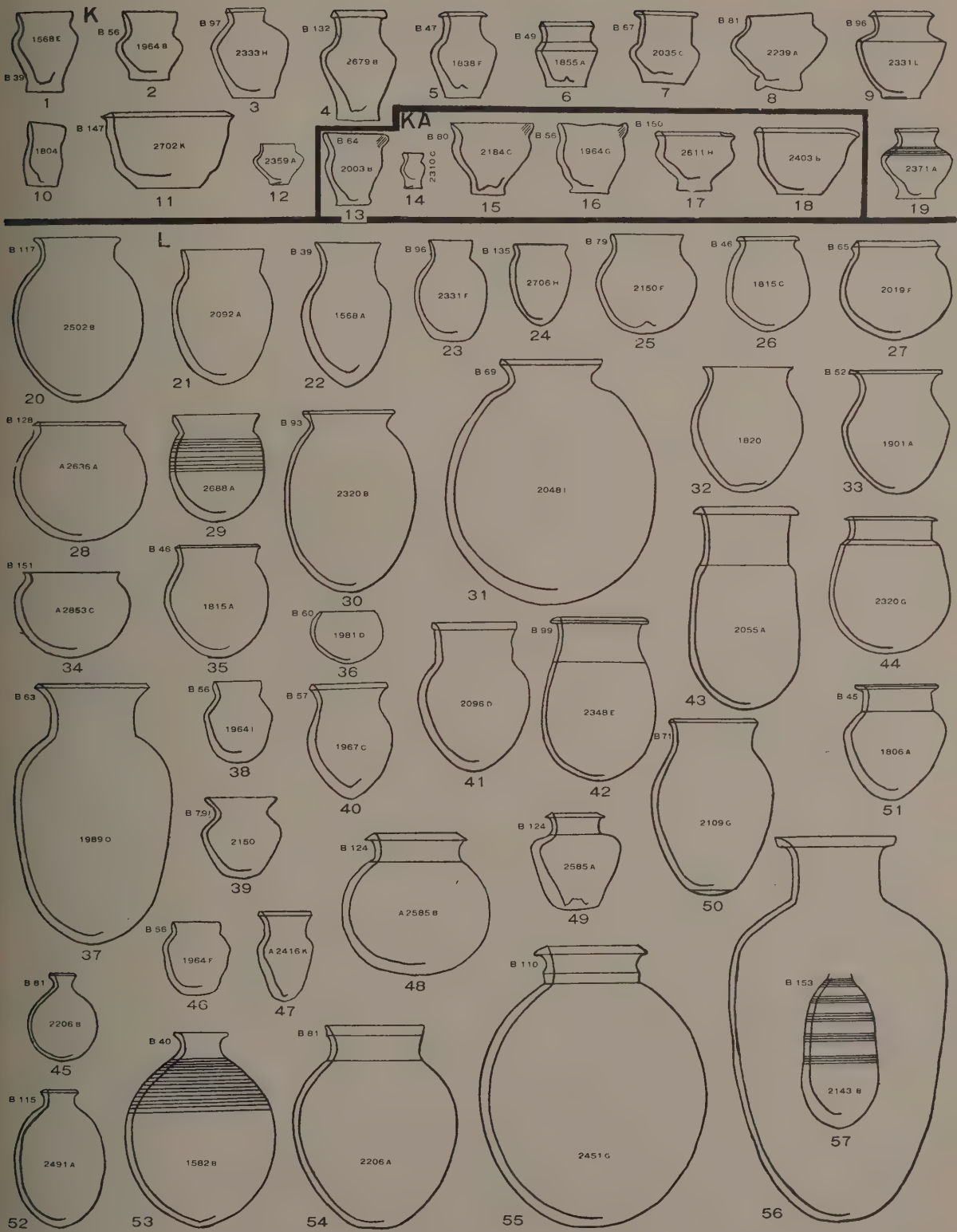
POTTERY TYPE B AND ORNAMENTED POTTERY.



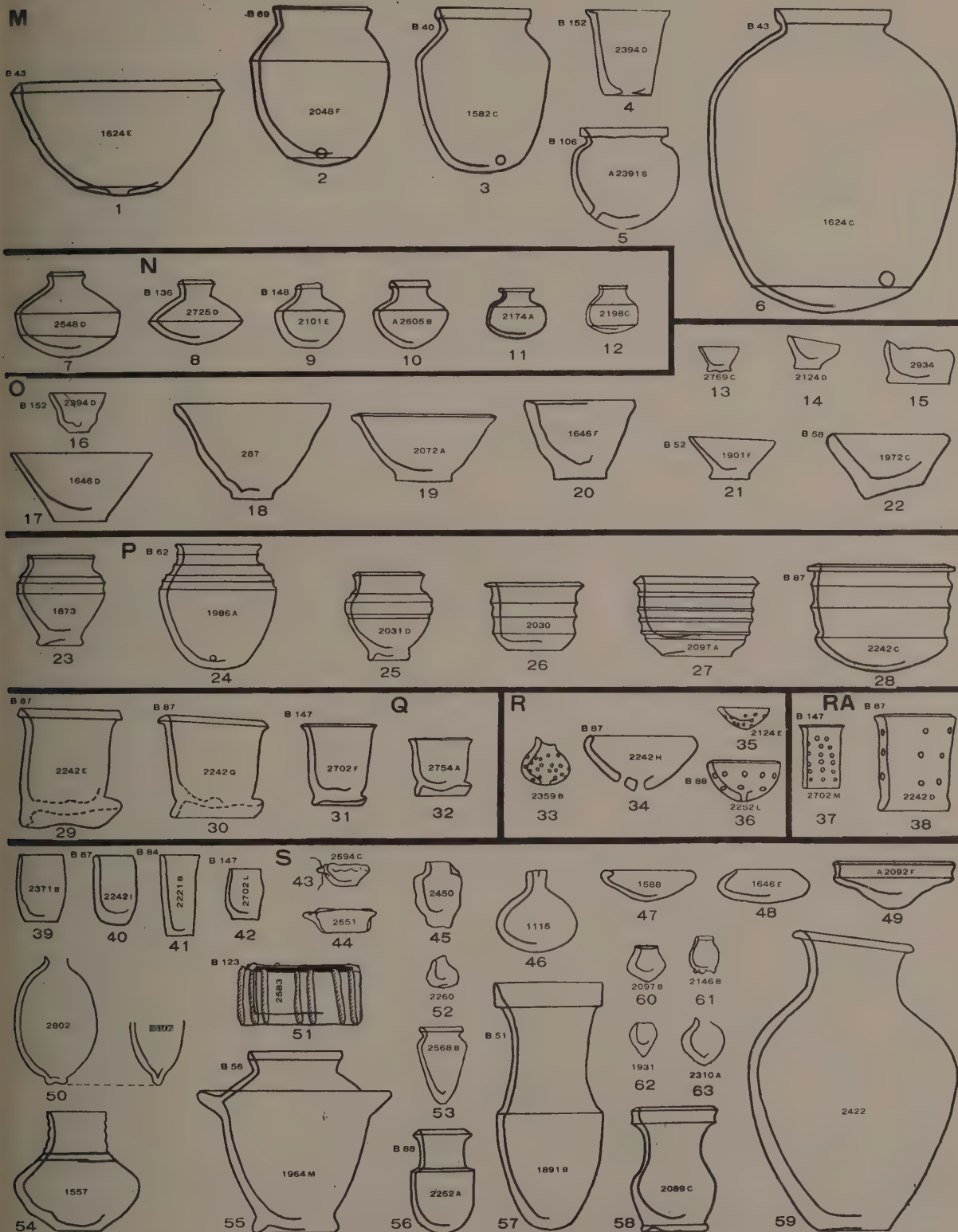
POTTERY TYPES C AND D.



POTTERY TYPES E, F, G, H, J, JA, AND JB.

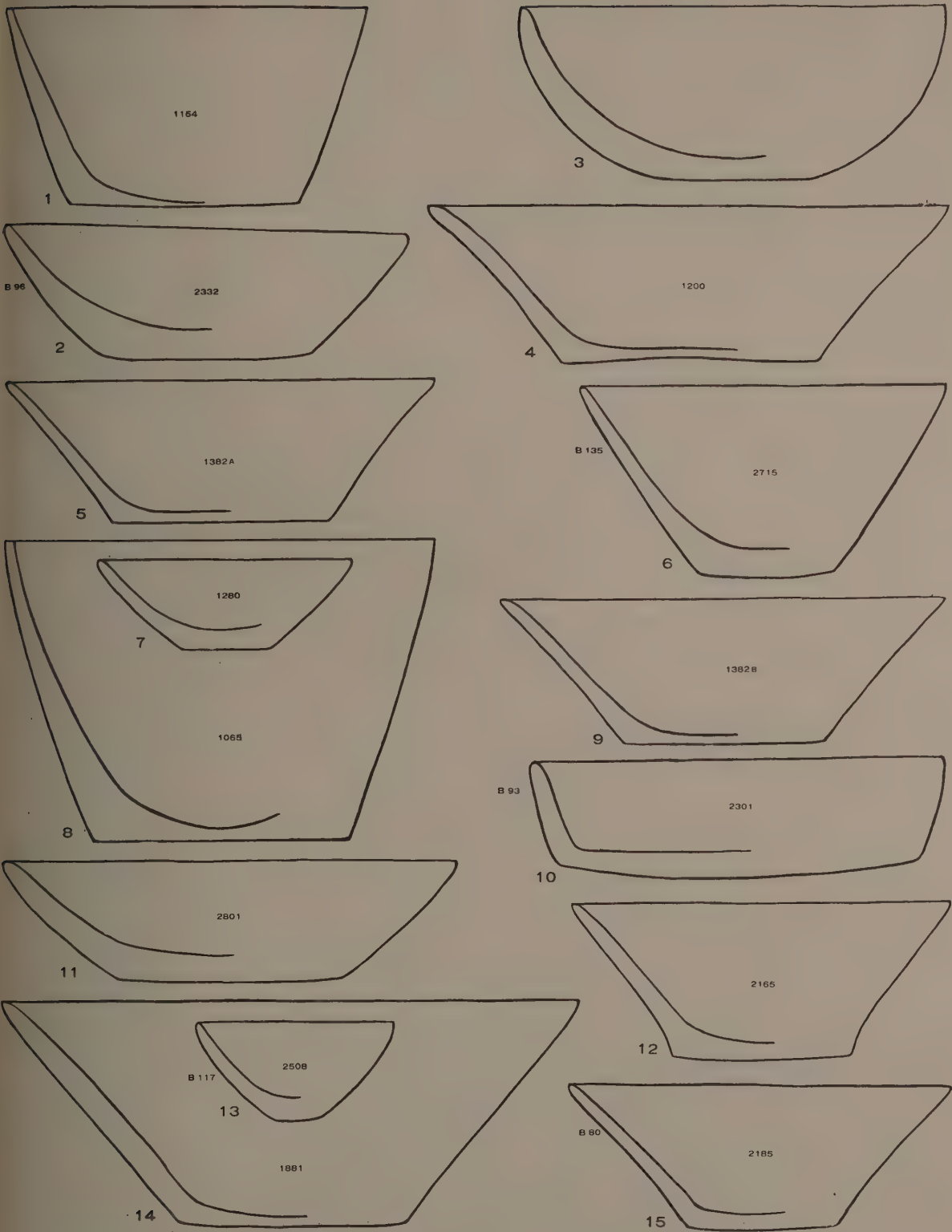


POTTERY TYPES K, KA, AND L.

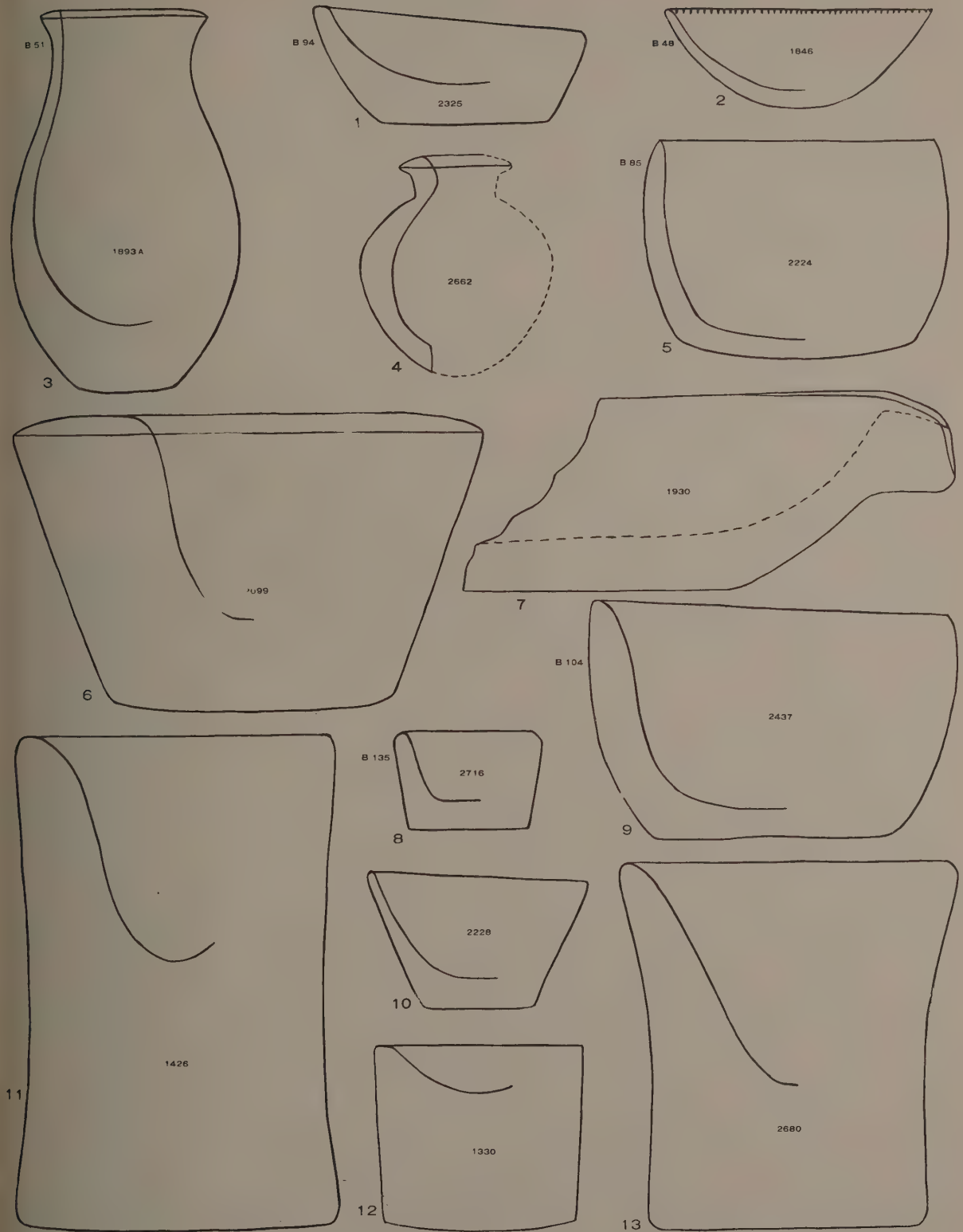


O—MEANS NO RECORDED BURIAL.
B—MEANS RECORDED BURIAL.

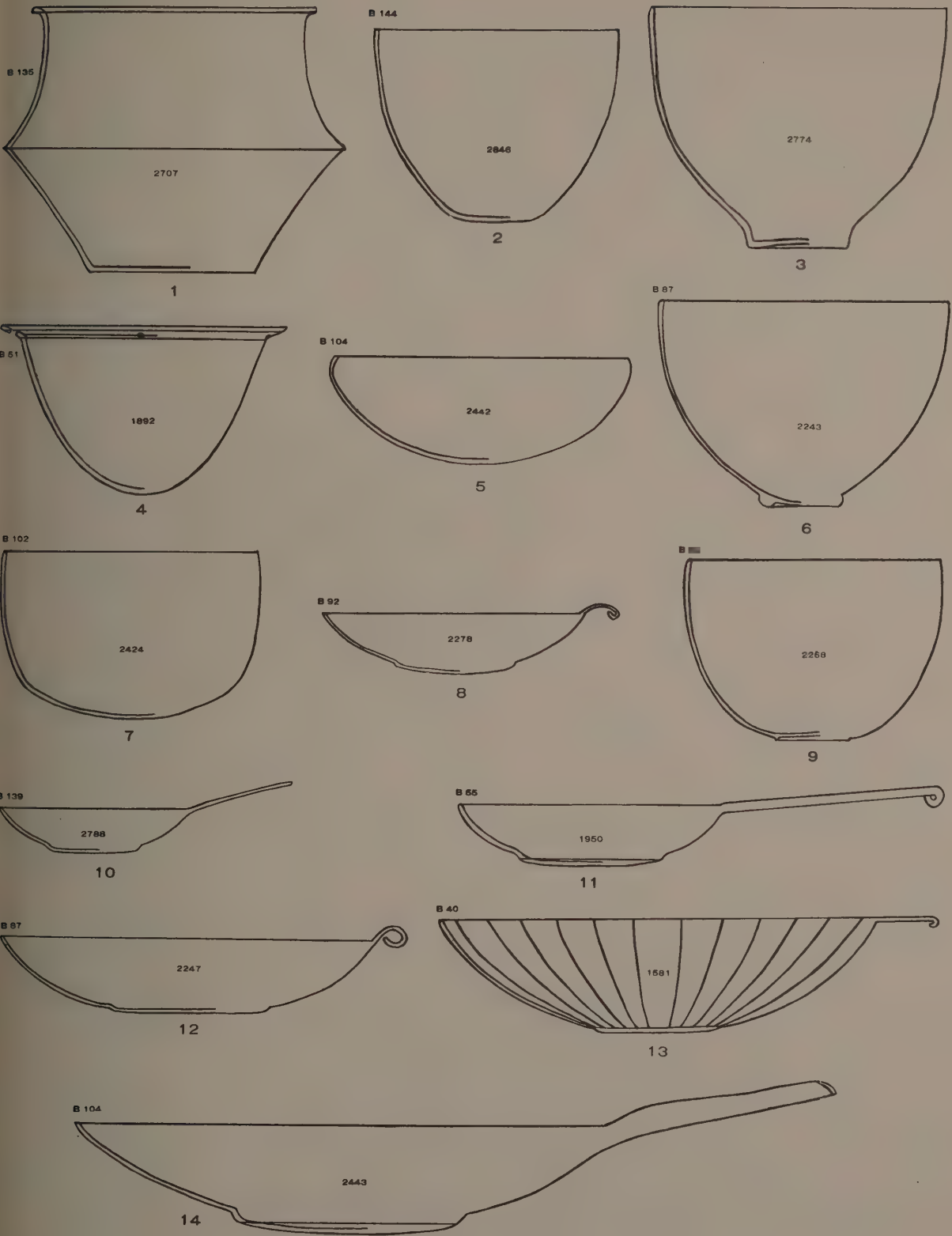
POTTERY TYPES M, N, O, P, Q, R, AND S.



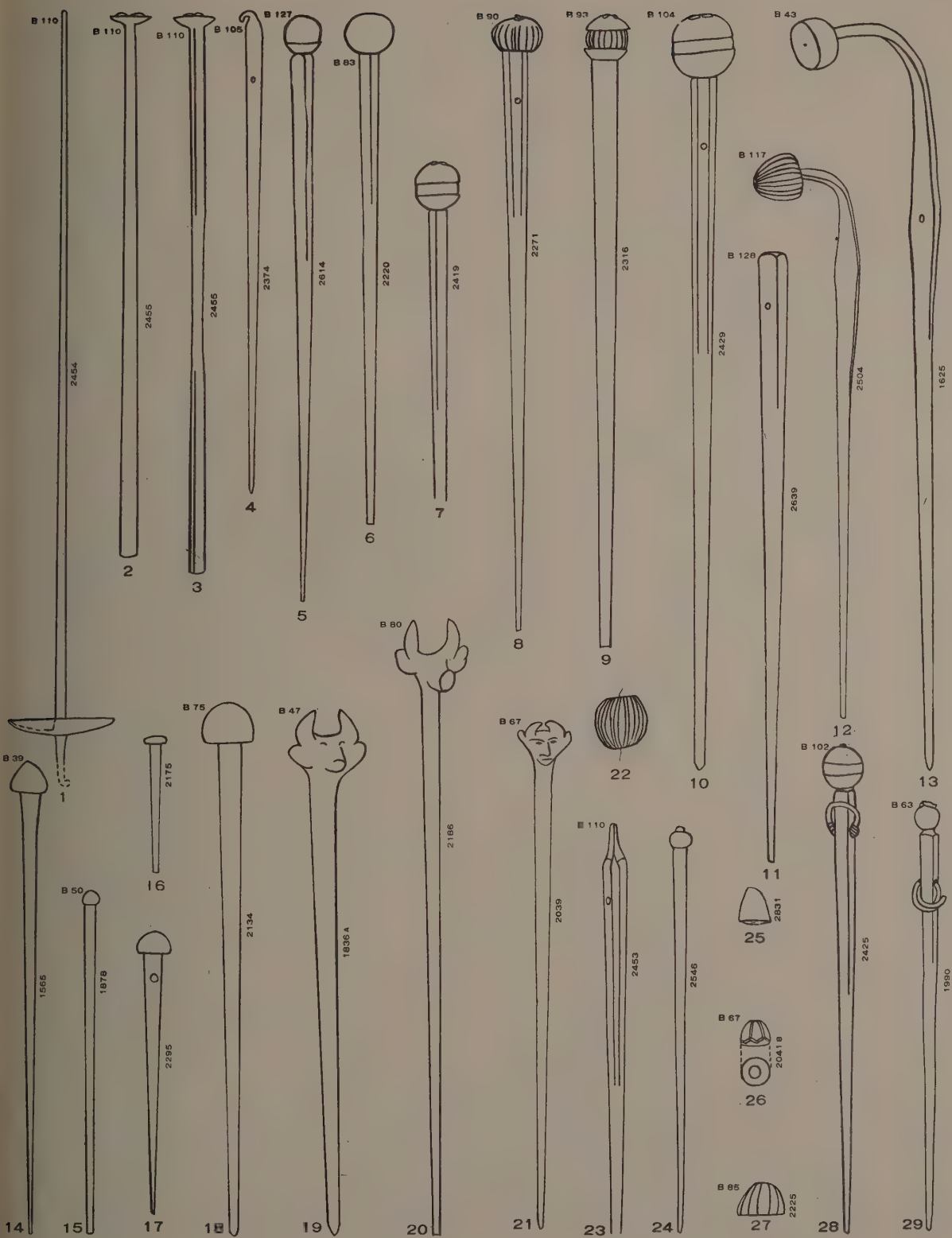
STONE BOWLS AND DISHES.



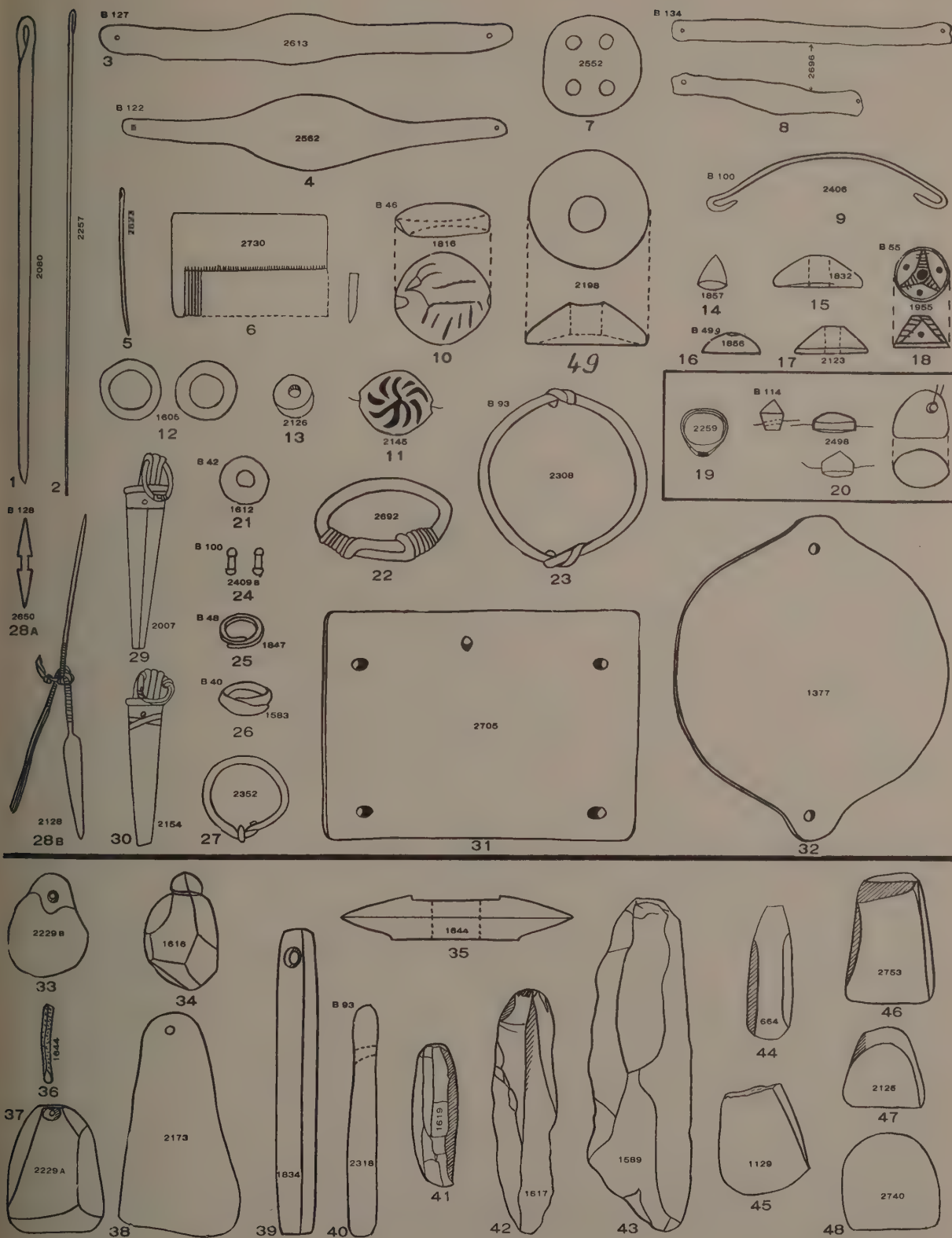
STONE VASES, DISHES, AND MORTARS.



COPPER BOWLS AND DISHES.

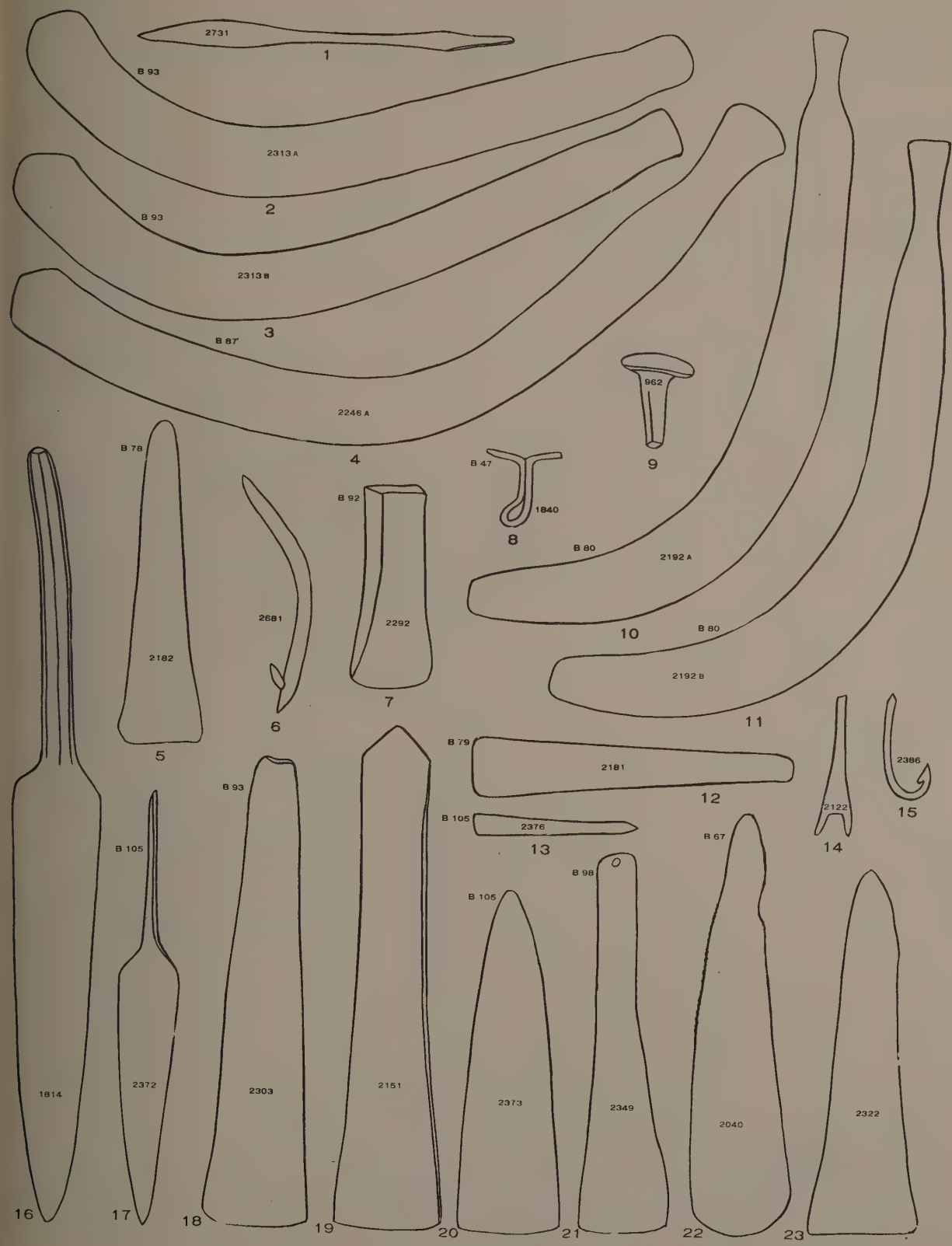


COPPER SPINDLES AND HAIR-PINS.

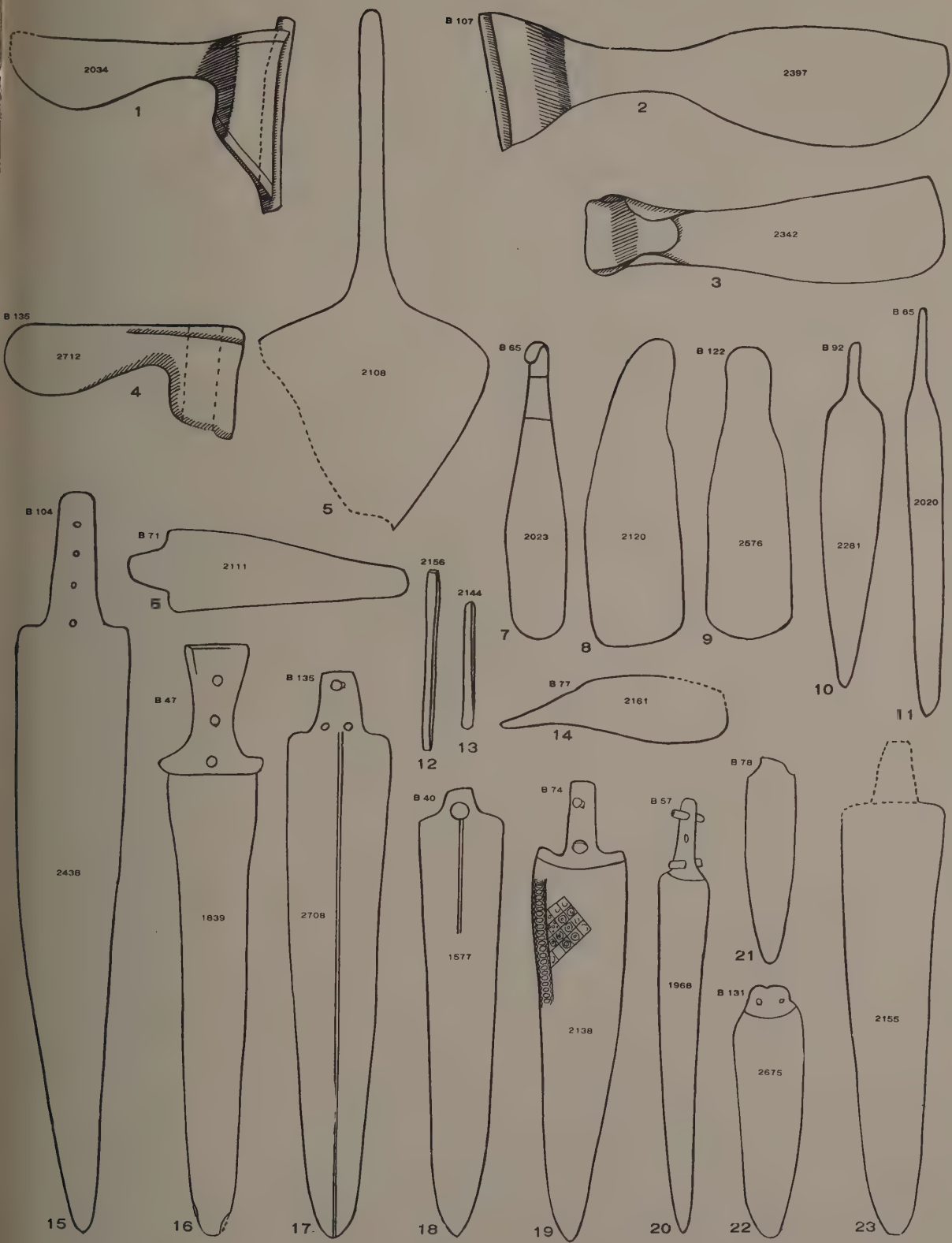


NEEDLES, FILLETS, PERSONAL ORNAMENTS, AND STONE OBJECTS FROM THE PALACE, MOUND "A" AND THE GRAVES.





COPPER WANDS, SPEAR-HEADS, ADZES, ETC., FROM MOUND "A" AND FROM THE GRAVES.



BATTLE AXES, KNIVES, AND DAGGERS FROM MOUND "A" AND THE GRAVES.

FIELD MUSEUM OF NATURAL HISTORY

FOUNDED BY MARSHALL FIELD, 1893

ANTHROPOLOGY, MEMOIRS

VOLUME I, No. 3

REPORT ON EXCAVATIONS AT
JEMDET NASR, IRAQ

BY

ERNEST MACKAY

WITH PREFACE BY STEPHEN LANGDON

18 Plates

FIELD MUSEUM—OXFORD UNIVERSITY JOINT EXPEDITION

BERTHOLD LAUFER

CURATOR OF ANTHROPOLOGY

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CONTENTS

List of Plates	221
Preface by Stephen Langdon	223
Introduction	225
I. Pottery	229
Undecorated	232
Monochrome Decoration	232
Polychrome Decoration	232
Incised Decoration	233
Materials of Which the Pottery Is Made	233
Slips	234
Painted Designs	236
Spouted Vessels Type A	237
Four-lugged Vessels Type B	240
Single-lugged Vessels Type C	242
Strap-handled Vessels Type D	242
Pottery with Plain Rims Type E	244
Pottery with Overhanging Rims Type F	245
Pottery with Beaded Rims Type G	246
Beakers Type H	247
Strainers Type J	248
Dishes and Pans Type K	248
Cups and Bowls Type L	249
Jar Stands Type M	250
Unusual Types	250
II. Monochrome and Polychrome Designs	253
III. Tools and Implements	265
Adze	265
Spatula	265
Fish-hooks	265
Stone Implements	265
Hones	265
Celts	266
Axes	266
Sickles	266
Spindle-whorls	267
Needles and Bodkins	268
Mace-heads	268
Bricks	268

Gutters	269
Stone Objects of Uncertain Use	269
Plumb-bobs or Loom Weights	269
Sling-stones	269
Reel	270
Objects of Unknown Use	270
IV. Personal Ornaments	271
Hair-pins	271
Beads	272
Pendants and Amulets	274
Ear or Nose Ornament	276
V. Cult Objects and Playthings	277
Cult Objects	277
Gamesmen	277
Animal Toys	278
VI. Stone and Metal Vessels	279
Stone	279
Metal	280
VII. Seals	281
Cylinder Seals	281
Press Seals	283
Lugged Seals	284
Tabulation of Seals	285
VIII. Conclusions	287
Additional Notes	293
Index	295

LIST OF PLATES

- LXIII. Spouted Pottery Type A.
- LXIV. Lugged and Strap-handled Pottery Types B, C, and D.
- LXV. Pottery with Plain and Overhanging Rims Types E and F.
- LXVI. Beaded Rims, Beakers, Strainers, Dishes, Pans and Unusual Types, Types G, H, J, and K.
- LXVII. Pottery Cups, Jar Stands, and Stone Vessels Types L and M.
- LXVIII. Monochrome and Polychrome Designs on Pottery.
- LXIX. Polychrome Designs on Pottery.
- LXX. Tools and Implements.
- LXXI. Needles and Bodkins, Hairpins, Bead Amulets, Stone, Pottery, and Metal Objects.
- LXXII. Beads and Amulets.
- LXXIII. Cylinder and Stamp Seals.
- LXXIV. Pottery Animals, Amulets, Spindle-whorls.
- LXXV. Objects of Stone, Pottery, and Metal.
- LXXVI. Pottery.
- LXXVII-LXXIX. Restored Painted Pottery.
- LXXX. Fragments of Painted Pottery.

PREFACE

This publication by Mr. Mackay contains an accurate account of the archaeology of Jemdet Nasr and forms a companion to my study of the inscriptions which I found with these objects, entitled "Oxford Editions of Cuneiform Texts, Pictographic Inscriptions from Jemdet Nasr," VII (1928). Mr. Mackay catalogued every object which I brought in from that site each night of my return, and this account is exhaustive so far as my own work in the winter of 1925-26 is concerned. However, at the end of the season 1927-28, Mr. Watelin, together with Messrs. Henry Field and Eric Schroeder, again excavated there intensively for two weeks, March 13-28, 1928. Their discoveries modify Mr. Mackay's conclusions considerably, and the salient results of the new discoveries must be noted here, while they should be reserved for scientific treatment in another publication. In an account of the excavations in Babylonia from 1918 to 1926, "Ausgrabungen in Babylonien seit 1918," *Der Alte Orient*, XXVI, I gave an account of my work at Jemdet Nasr, "Ruins of Nasr" (pp. 67-75), with a plan of the large building in which most of the objects were found (Fig. 12). Unfortunately the German edition published the plan of the mound (Fig. 11) erroneously. West should be north, east should be south, north should be east, and south is to be changed to west.

Watelin's excavations in 1928 yielded many painted pots and fragments with beautiful animal designs, a kid sucking at a she-goat's udder, long-antlered deer, aquatic birds, fish, and other complicated designs which compare favorably with the best painted ware of the so-called Susa II type (now regarded by Watelin as earlier than Susa I). Jemdet Nasr pottery, therefore, can hardly be regarded as later than the Susa painted ware (p. 228). The author's remarks on the decadent style of drawing animals (p. 260) would undoubtedly be modified by him, had he been able to study the extensive collection of new material in Field Museum. The best designs, however, show distinct traces of convention and decadence. The double-spouted vase (Plate LXXVI, Fig. 3) has now been found near water level at Kish (see *Journal Royal Asiatic Society*, 1930, Plate X) and may be the *ghara mashtabba* or *tu'amatu* pot of the Sumerians (*Revue d'Assyriologie*, VI, p. 130, Obv. 5). The prevalence of the design of the pig at Jemdet Nasr proves clearly enough that this animal was held in high esteem, in striking contrast to the Accadians, who pronounced the pig unclean, soiler of the streets, unfit for the temple, and the abomination of the gods. This is cultural evidence that no Semitic influence can be found at Jemdet Nasr. The names of the deities found on the pictographic tablets are all well known Sumerian gods, and so is every one of the signs. Against all this evidence it seems to me impossible to argue that the inhabitants of Jemdet Nasr are not Sumerians on the ground that the numerical system used by them, in grain measures only, is decimal. The ordinary numerical system is sexagesimal as in Sumerian, and so also is the system of land measures.

When Jemdet Nasr perished by fire before 3500 B.C., it was already a civilization of great antiquity. This has now been proved by a trench ten feet deep made near the tell by Watelin, in which he did not reach virgin soil. The same culture is found at Kish eight feet above virgin soil, and thirty-five feet below the Sargonic period. In view of these facts and the primitive nature of the inscriptions, a date 4000 B.C. seems indicated for the culture described in this publication. A good many tablets have again been found, notably one, which adds largely to the list of signs, Nos. 193-94 of my "Pictographic Inscriptions," proving that this ancient people had already begun to take an interest in linguistic studies. It is remarkable that this same list recurs in the ancient and more prolific group of inscriptions found at Shuruppak, about five centuries later. Shuruppak is of undoubted Sumerian culture, and nothing could prove more decisively the homogeneity and continuity of culture of the prehistoric civilization of Sumer in the north at Kish and Jemdet Nasr, in the south at Shuruppak and the great Sumerian cities of that region. The Field Museum-Oxford University Expedition has revealed the origins of Sumerian civilization in an area where almost nothing was known, when excavations began at Kish in 1922. Undoubtedly the wide area conceded to the expedition by the Department of Antiquities of Iraq contains secrets even more important than those which have been revealed. In this area are the colossal ruins of Barghuthiat southwest of Jemdet Nasr, a place of undoubted antiquity, although only Neo-Babylonian objects appear on the surface and Abu Sudaira, three miles east of the central ruins of Kish, where trial trenches have been begun at the date of this writing.

As director of the expedition I am constrained by the gratitude of all archaeologists to express their and my own appreciation of the support received from Field Museum and from those who have contributed on behalf of Oxford, especially Dr. Weld, Dr. Robert Mond, Sir Charles Marston, and General Dawes, the American ambassador.

STEPHEN LANGDON,

Professor of Assyriology.

Jesus College, Oxford, December 20, 1930.

REPORT ON EXCAVATIONS AT JEMDET NASR, IRAQ

INTRODUCTION

In March, 1925, a Hillah dealer brought to our camp at Kish a small number of tablets inscribed with archaic characters and a few pieces of painted pottery. On my inquiry for the provenance of these objects I was told that they came from a site named Jemdet Nasr, about fifteen miles northeast of Kish. Professor Langdon has now identified the site as the ancient Kid-Nun(-ki). Realizing the character and extreme age of these objects, I immediately sent one of our most trusted and reliable native workmen to make further investigations on the site, with the result that two days later he brought us more painted pottery and tablets. The authenticity of the site being thus established, Father Burrows, my wife, and I went to the place the following day (March 26) and found that, though a little illicit digging had been done by the Arabs, the site was so large that it would be profitable to excavate it.

During the season 1925-26, Professor Langdon undertook the responsibility of clearing the mound unaided, and in a little time our storeroom at Kish contained a large quantity of painted pottery and other objects. The professor made a daily trip by motor-car to the site and superintended the whole of the work there, four gangs being employed at first and eight later on.

Some considerable preparation had to be made in order to reach Jemdet Nasr by car, owing to the number of canals that had to be crossed. We had to make at least six bridges and to keep these in repair while the work was going on. The road also had to be leveled in places, though traveling was good when the limits of the cultivation round Kish had been passed. A noticeable feature along the road was the tracts of potsherds that were passed at intervals. These tracts were not associated with the remains of villages or towns; the sherds, all of which appear to be of late date and are accompanied by a little blue glaze which appears to be Parthian, were lying on the surface of the desert. It is quite possible that these tracts are ancient camping grounds either of caravans or of Beduins. The latter probably visited these sites in ancient times, as they do now, on their annual journeys during the rainy season to the south and back in search of pasturage for their flocks.

At the commencement of the work, some difficulty was experienced in providing water for the men, and Professor Langdon had to take out a sufficient supply each day for cooking and drinking as well as a reserve for emergencies. Later on in the season a good supply of rain water was available, relieving us of some anxiety as to this branch of the commissariat.

The series of three mounds, locally named Jemdet Nasr, lies about fifteen miles northeast of the temple-tower of Tell Ahaimir and just north of the more

extensive mounds of Tell Barghutait and west of Tell Reshada four miles. Both mounds are of late date.

The chain of mounds, which is orientated E.NE.-W.SW. (Plate LXXV, Fig. 1), is about 850 m long and 180 m wide. The highest portion of the central mound is exactly 3.40 m above the level of the surrounding plain. This mound, which is the most important, measures 360 x 180 m, roughly. It is irregular in shape with depressions and ravines cut by the annual rainfall. It was here that Langdon made his principal discoveries. The mound to the W.SW., measuring 105 x 70 m, is higher. It is separated by a distance of 28 m from the main mound. Its summit is occupied by the remains of a small building of baked bricks measuring 31 x 31 x 8 cm, which is of neo-Babylonian date. There is also a well there of the same date, lined with burnt bricks.

To the E.NE. of the central mound and separated from it by a distance of 280 m, there is another small mound, 90 m square. This mound stood about 6 m above the plain level and was covered with broken pieces of burnt bricks, which were 34 x 34 x 6.5 cm in size originally. These bricks are also presumably of neo-Babylonian date.

Apart from these later remains in the outer mounds, the site possesses an exceptional advantage because it is of one period only, and that an exceedingly early one, for the pottery was painted and some of the shapes were very much of the same types as were found at Musyan in Elam. In addition, the tablets found with the pottery are inscribed with characters just emerging from the pictographic stage (Plate LXXVI, Fig. 1).

The character of the building unearthed by Professor Langdon, of which a plan prepared by himself will be published shortly, is at present open to question. The walls, which were in a very poor state of preservation owing to damp and the attacks of salt, were built of mud brick and on this account were very difficult to clear. Some, indeed, could not be satisfactorily traced. It is an open question whether there is here a temple or the site of a village. I am personally inclined to the view that it is the remains of a small temple surrounded by priests' quarters. Great attention was paid to the proper alignment of the better preserved of the walls; they were very thick and the character of the masonry good—features which would be absent in all but very important buildings in a town site.

This building, in common with most large buildings of early date in Sumer, had been burnt. Most of the walls and many of the objects found within them showed traces of fire. This was to a certain extent a blessing in disguise, for many of the tablets were preserved by this means alone. But, unfortunately, the painted designs on the pottery were in many cases spoiled by fire.

This conflagration was probably caused by an invader who drove out the inhabitants and after sacking the place set fire to it, in all probability to prevent reoccupation. The roofing was of wood covered with reed matting, with a layer of clay or earth on the top. Impressions of reed matting were also found on the lower surface of some of the kiln-burnt bricks at Jemdet Nasr. A roof of this type would fall inside the rooms and smoulder, it may be, for days, being partially

damped by the clay covering which fell with it. This would account for the lower parts of the walls showing more traces of burning than the upper courses.

The matting used in the roof was coarsely made of reed-stems laid together in rows and united by cords at intervals. Some of the burnt bricks were clearly laid to dry on matting made of split reeds, very similar to that made at the present day in Iraq. It is possible that both burnt and unburnt bricks were dried on matting, but owing to the difficulty of extracting an unburnt brick from the walls complete, it is impossible to test the point.

In our present state of knowledge, it is impossible to date the site and objects from Jemdet Nasr with any great degree of accuracy. Provisionally, the date may be placed round about 3500 B.C. for the following reasons:

1. The tablets are inscribed in extremely archaic characters, which more nearly approach pictographs than cuneiform writing. They are, in fact, in the transition stage between the two, with a bias toward their origin. The Jemdet Nasr tablets certainly belong to an earlier period than the tablets found by de Sarsec at Lagash, which have been approximately dated at about 3000 B.C. The clay tablet found in the Sumerian palace at Kish in the season 1924-25 is apparently of the same date as the Lagash tablets. From its position it belongs to the same period as the numerous graves found lying in and above the palace, which independently and by comparison with objects discovered by Andrae at Assur and Woolley at Ur are dated at about 3100 B.C. As far as we can see at present, the Jemdet Nasr tablets must therefore be assigned to a period not later than 3500 B.C. Indeed, they may be considerably older; for no trace of the painted pottery with which these tablets were associated was found in any of the rooms of the great Sumerian palace, which lay beneath the "A" graves at Kish and which we had to date provisionally at 3500 B.C.

My successor at Kish, M. Watelin, has now dug to a low level in the mound of Ingharra, and painted pottery and clay tablets similar to those unearthed at Jemdet Nasr were found at a very considerable depth below the pre-Sargonic level of the "A" burials. The levels certainly suggest that a considerable interval elapsed between the two occupations. When the date of these clay tablets is definitely established, we shall perhaps be able to fix the period of the stone tablet that was found in the "A" mound, although it obviously belongs to an earlier period (No. 2 of this volume, Plate XXXVI, Figs. 7-8).

2. Some of the painted pottery of Jemdet Nasr is very similar to the painted pottery found at Musyan, both in the polychrome nature of its decoration and in form. Many examples from the two places are practically identical and appear to have been made by people of the same race. The pottery found at Musyan by MM. Gautier and Lampre in 1903 came from the lowest levels, and is akin both in style of decoration and in shape to some of the painted pottery found by de Morgan at Susa, and classified by him as the second Susian period. There is, however, some little difference between the pottery found at Susa and Musyan; it is with the latter ware that the pottery from Jemdet Nasr is more closely comparable, though it is possibly slightly later. No serious attempt has yet been

made—perhaps wisely—to date the Musyan ware, but most authorities are agreed that it belongs to a very early period, both from the position it occupied in that mound and by the fact that it was accompanied by *racloirs* and obsidian knives.

The chief reason for assigning a somewhat later date to the Jemdet Nasr pottery is that its decoration is somewhat inferior both in design and technique to that of the pottery of Musyan. For instance, animal figures are rare on the Jemdet Nasr ware and when portrayed are frequently unrecognizable, whereas on the later Susian pottery and at Musyan the animal devices are well drawn and clearly recognizable and occupy an important position in the decoration.

Unfortunately, the wares of periods I and II at Susa have not yet been satisfactorily related as regards date, although much of the material belonging to the second period was found beneath a stratum of the date of Naram-Sin (*Mémoires de la Délégation en Perse*, XIII, p. 23). The date of the latter ruler is about 2732 B.C., but it is certain that the painted ware of Susa II is very much older. The painting of pottery seems to have been discontinued in Mesopotamia well before 3100 B.C.; no painted wares have been found in either the Al 'Ubaid cemetery II or the "A" cemetery at Kish. We found in the Ingharra mound one example of a painted "granny" jar, but the designs and technique of the painting do not in the least resemble the painted wares of Al 'Ubaid I or Jemdet Nasr. This particular jar, which is not yet published, may, however, be a survival from the earlier painted wares. The painting and design on this handled jar do not resemble those on the painted pottery of Jemdet Nasr either in the kind of paint used or in color. The design, which was a naturalistic one, was painted with a friable color which rubbed off easily, for which reason great care was needed in extracting the vessel from the soil.

I. POTTERY

In reading this brief account of the pottery from Jemdet Nasr the reader should realize that it is probably the earliest pottery that has been found in Mesopotamia up to the date of writing, omitting the pottery found during the seasons 1926-28 in the Ingharra mound at Kish (for no particulars have as yet come to hand concerning it) and excluding perhaps the pottery found at Ur (Al 'Ubaid, cemetery I), which appears to be of an even earlier type. In shape and style of decoration it is not comparable with any of the later wares of the country, but seems to stand in a class of its own.

In most cases the designs on the complete jars from Jemdet Nasr were too indistinct to be made out owing to scaling caused by damp and salt. Unusual designs were copied on tracing paper and are reproduced in Plates LXVIII-LXIX. Most of the designs were taken from fragments of pottery rather than from complete jars. Interesting as are some of the designs, the forms of the pottery are perhaps more important, and for this reason they have been given greater prominence.

Practically all the pottery is wheel-made, hand-made specimens being rare. Many of the coarser vessels, such as cups and dishes with flat bases, have a series of focused grooves on the base, made by cutting through the clay while it was upon the wheel with a cord or a piece of twisted palm leaf.

Much of the pottery is warped through overfiring, and much is indifferently baked, which suggests that the potter was unable to control the heat of his furnace. This would account for so many imperfect pieces of pottery having been put into use, whereas after a series of successful burnings the potter would have thrown away the defective pieces as unsalable.

The hand-made ware is extremely rough, as will be seen from the two dishes shown in Plates LXXVI, Fig. 7, and LXIV, Fig. 5. Figs. 22-23 in Plate LXVII were also roughly made by hand. It is a curious fact that hand-made utensils should have been so rare at that period, whereas they were comparatively common in the "A" cemetery at Kish; though, it is true, the hand-made ware in the latter place was confined to the smaller jars and dishes. Since the wheel-made pottery of Jemdet Nasr is superior to that from the "A" cemetery at Kish, one would naturally expect the hand-made pottery also to be of finer workmanship, but the reverse appears to be the case.

None of the pottery at Jemdet Nasr was particularly thin. It was in fact substantial ware, some thickness being necessitated by the poor baking. It in no wise resembles the thin ware of Susa I, and is more akin in this respect to the pottery found by Woolley in the earlier cemetery at Al 'Ubaid.

The jars with very angular shoulders were probably made in two pieces. Proof that this was done at least occasionally is afforded by the second jar illustrated in Plate LXXVI, Fig. 4. The neck and rim of this pot, which is a

painted one, were made separately from the body and the two portions failed to adhere properly when joined. This method of making certain types of jars in two pieces was also practised by the people who made the pottery of the "A" cemetery at Kish. Both there and at Jemdet Nasr the joining was so skilfully done that it is most difficult to detect. Probably the jar was placed on the wheel again for a final trimming-up after the join was made. The same method is practised in Sind (India) at the present day.

As in the pottery of the "A" cemetery, the upper portion was much better finished than the lower portion, except in the case of the jars painted in polychrome. In fact, in some of the coarser ware the bases are extremely rough and untidy. In some of the very attenuated spouted jars, the bases have even been pared with a knife to make them more presentable (Plates LXIII, Figs. 20 and 24; LXV, Fig. 12). The same is seen in the early pottery from Al 'Ubaid and the lower portions of some of the pottery jars of Mohenjo-Daro, Sind, India, also are pared.

The broad flat bases of much of the painted pottery are an interesting feature, especially when we take into account the fact that in most of this decorated ware the base was as carefully made and coated with a slip as was the remainder of the vessel. It appears from this fact that these jars were not intended to be placed on rough ground; they were most likely kept on shelves or special stands, if indeed, they were not hung up, as their perforated lugs seem to suggest. In the latter case their carefully finished bases would be seen from below.

Ring-bases were rare and found only on the vessels illustrated in Plates LXIV, Fig. 5 (hand-made), LXV, Fig. 38, and LXVI, Figs. 31 and 39. The base of the jar shown in Plate LXVI, Fig. 31, however, should perhaps not be regarded as a ring-base, for it is more cup-like in form. Possibly this form of base was just being introduced at Jemdet Nasr. At Al 'Ubaid ring-based vessels were fairly common in both cemetery I and cemetery II; they were very common indeed in the graves of the "A" cemetery at Kish. Farther afield, ring-based pottery was a common feature of grave equipment at Nal in southern Baluchistan, and the ring-base is known, though it is very rare, in both the painted and unpainted wares of the chalcolithic sites of Mohenjo-Daro and Harappa in India. It occurs somewhat rarely in the pottery of the first period of Susa, but is very common in the pottery of the second period, and also at Musyan.

Ring-bases must be regarded as a considerable advance in the potter's craft; they prevented the soiling of the bottoms of the vessels fitted with them. This type of base could only have been really useful on hard ground or floors; for standing on loose earth or sand, jars with round or pointed bases would have been more convenient. Doubtless the idea of a ring-base was derived from a ring of pottery upon which round-based jars were set in case of need, and it probably was not long before some enterprising potter attached such a stand permanently to the base of some of his vessels. Very few of the Jemdet Nasr jars have rounded bases, but it will be noticed that in many cases the base is so narrow

that a support of some kind is inferred, though none have been found, except the unusual type of jar stand seen in Plate LXVII, Figs. 28-33. Ring stands of this description are as common at Mohenjo-Daro as ring-based pottery is rare.

An unusual base is shown in Plate LXIII, Fig. 22. It is flat beneath, but its edges project as a beading around the bottom of the jar. The cup-shaped base of the jar in Plate LXVI, Fig. 31, is curiously like the bases of a type of pottery found in the "A" cemetery (Plate XIV, Figs. 8-16, of this volume), though the upper portion of the jar is entirely dissimilar. The third jar in Plate LXXVI, Fig. 4, has a square base—a surprising feature—made by pressing out the corners from the inside of the jar. Two vessels with similar square bases were found in the large Sumerian building "P" at Kish, as yet unpublished.

Unfortunately, much of the pottery found at Jemdet Nasr was very much weathered owing to the dampness of the site and the prevalence of salt. Very few whole jars were taken from the chambers of the building; those that seemed perfect on excavation fell to pieces on removal. As the pottery was saturated with moisture, the colored designs appeared at first to be extraordinarily brilliant, but this brilliancy disappeared when the pottery dried. It will, however, be restored in a measure when the jars are repaired and properly treated.

A number of jars were also much damaged by fire, which so blackened them that the designs upon them could no longer be traced.

There was only one example of a pot-mark on the whole of the pottery of Jemdet Nasr. It is shown in Plate LXIX, Fig. 1, but it is somewhat indefinite. The first sign apparently represents an uncompleted human figure; the second and third signs are mentioned farther on in the section on the decoration of the pottery.

The fine theriomorphic jar in Plate LXXVI, Fig. 2, was found by Professor Langdon late in the season. It is rather roughly made in the form of a pig, and is described fully below in this chapter.

Notched ribbing or beading only occurs on the larger jars of the four-lugged type. Unfortunately, Professor Langdon did not find a single specimen of this type sufficiently well preserved to be drawn. That it was a very effective mode of decoration is shown by the larger fragment of pottery in Plate LXXVI, Fig. 10, which is also illustrated in black and white in Plate LXIV, Fig. 3. The smaller fragment is clearly a portion of a jar in which a wavy line of beading ran around the shoulder.

The two examples of a ribbed decoration shown in Plate LXXVI, Fig. 5, are unfortunately but small fragments of a type of jar of which up to the present no complete specimen has been found. The lower piece is of dark-gray clay, and just above the ribbing is the base of what appears to have been a flat handle of the type found on the "handled ware" of the "A" cemetery at Kish (see Plates IX-X of this volume). The upper fragment is a light red ware the clay of which had a large admixture of sand.

Though no whole jar was found with two spouts, we have proof in the fragments shown in Plate LXXVI, Fig. 3, that vessels were made with a pair of

spouts placed side by side. Such a jar would have been useless as a drinking vessel, and was probably used only for libations.

The twisted rope-like handles which are shown in Plate LXXVI, Fig. 3, are interesting, for they do not occur in Mesopotamia at any other period. They should therefore, if found in conjunction with other early objects, prove a valuable means of dating a site.

The Jemdet Nasr pottery was not always hard baked, though sufficiently so to withstand considerable wear. Fragments have been found, however, of some of the larger vessels—always of the four-lugged type—which show that peculiar greenish appearance that is due to overfiring, in fact, to partial vitrification. The color is due to the presence of iron in the clay. These may, however, be pieces of jars that have been thrown away because of overfiring and warping.

The pottery can be conveniently described under four heads: (1) undecorated; (2) monochrome decoration; (3) polychrome decoration; (4) incised decoration.

UNDECORATED

This type of ware is naturally that found most frequently. Roughly made beakers, dishes, pans, and certain kinds of spouted and handled ware were probably left undecorated because they were in common use and likely to be often broken and replaced. If such utensils were decorated, it was with a plain band of color or a very simple design. See Plates LXIII, Fig. 20; LXVI, Fig. 31; LXVII, Fig. 21; LXVIII, Fig. 2.

MONOCHROME DECORATION

Either red or, more usually, black was used for simple monochrome decoration. The designs were strictly geometrical, with the exception of the plant design shown in Plate LXVIII, Fig. 2. The red paint was applied directly on the pottery without an intervening slip and, in consequence, has retained its color well. Two shades of red occur, a bright red and a purplish red, though never on the same jar in monochrome decoration. In the case of the broader bands of color, the paint seems to have been applied with a mop-like brush.

The black used seems to have been of two kinds. One was a cold black, probably made from some form of carbon. The second has a pronounced purplish tone and probably had a manganese base or possibly a little red was mixed with the black. A warm purplish black was used on much of the predynastic pottery of Egypt. It had a manganese base and was especially suited to withstand the heat of the furnace when the jar was baked. The same material was used in painting the designs on the pottery of Mohenjo-Daro and is still used for the modern painted pottery of Sind.

POLYCHROME DECORATION

This method of decoration seems to have been confined to two types of jar (Plates LXIV, Figs. 1-15; LXV, Figs. 15-38). Only three colors were employed: black (either cold or purplish), red (either bright red or plum-color), and yellow

ochre(?). The yellow was always used as a ground for the other two colors. In many cases, the colored ground was dispensed with, and either a slip of a neutral shade was used or no slip at all. In the latter case, the natural color of the pottery formed the ground of the design.

INCISED DECORATION

No color was employed in this form of decoration, which was done by hatching or pitting. The designs most frequently used were hatched bands and triangles. The latter were always placed with the apex uppermost, and the interiors were filled in with a simple crisscross hatching, made with a single point, not with a comb. Examples of incised decoration are illustrated in Plate LXVI, Figs. 35-37 and 43. Very little of the pottery was decorated with incised designs, and this form of ornament was apparently reserved for the type of jar seen in Plate LXIV, Figs. 11-12. Only small fragments were found of jars incised with triangular designs.

MATERIALS OF WHICH THE POTTERY IS MADE

The pottery is made of various kinds of clay, which were examined in the field with a magnifying lens to determine their nature as far as was possible without actual analysis. For the polychrome pottery a clay that burned a light red was always used; it was sometimes mixed with sand to temper it and in most cases contained a large percentage of lime, which is clearly distinguishable to the naked eye. For monochrome pottery a similar clay was used, as well as, but very rarely, a yellow or a gray clay. Sometimes a little brownish river-clay, readily perceptible through a glass of small power, was mixed with the clay that is now light yellow, to make it more plastic. The colors of the yellow and gray wares were not caused by various degrees of heat in the kiln in which they were baked, though heating must have influenced the color of the clay to a certain extent; they are definitely due to the various qualities and kinds of clay employed.

Some of the vessels (Plates LXIII, Fig. 11; LXIV, Fig. 14, types C and D; LXV, Figs. 2 and 31; LXVI, Figs. 3-4; LXVII, Figs. 16-17) were made of a drab-colored ware, which was nearly always very badly baked. This was probably a river-clay rather than a clay taken from the more sandy and lighter colored alluvium; the latter generally burns a light straw-color. Vessels of this heavier type of clay were nearly all of rough workmanship.

The colors of the clays and of the materials used to temper them prove, I think, that the pottery of Jemdet Nasr was made in more than one locality. These localities need not have been a great distance apart, for suitable material would be readily procurable from the two great rivers and in the surrounding plains. The red ware was in all probability a river-clay, which was found to be too rich and to require the addition of either sand or lime as a *dégraissant*. The yellow ware seems to have been made from the alluvial loam that now covers lower Mesopotamia; this, however, is not a satisfactory material for making pottery unless it be mixed with a certain proportion of a stiffer clay, as was certainly done at Jemdet Nasr.

The gray ware (Plates LXIII, Fig. 30; LXIV, Fig. 10; LXVI, Figs. 3, 42) that was occasionally found was thought at first to owe its color to vitrification, but, as it was found to be extremely soft, this possibility had to be ruled out. All the jars made of this kind of clay were broken, and owing to the softness of the paste they were exceedingly difficult to repair. The want of homogeneity in this gray ware is not due to an excess of sand, for it contains but little, if any, of that material. A similar gray ware is commonly found in the early chalcolithic sites of Baluchistan and India.

A complete bowl and a fragment of a jar were found made of a clay which was artificially blackened, either by mixing ordinary clay with a black substance such as charcoal, or by incorporating a material that carbonized in the kiln. The bowl (Plate LXVI, Fig. 28) is undecorated, but the fragment of pottery had an incised design upon it, consisting of a narrow band filled in with a zigzag motive in groups of either three or four lines. Above this was a wider band-like border with groups of parallel lines arranged vertically in blocks alternating with blank spaces. This variety of incised ware was probably rare, as only the one small fragment was found. There was no white filling in the incisions, though this was to be expected on the analogy of similar ware found at Kish (Plates I, Figs. 2-3; XLV, Fig. 5, of this volume). There is, however, no reason why this filling should not once have existed and have completely disappeared.

There is no doubt that the clay used for this ware was mixed with some other material in order to change its color rather than to alter its plastic nature. It has not been analyzed yet, but the burnt material in it will probably prove to be cow's dung or a similar substance. The surface was rubbed down before baking to close the pores and to impart a slightly burnished appearance.

Much of the red clay had a great deal of dirt mixed with it, charcoal being very common. This was probably unintentional and due simply to the clay being kneaded on dirty ground. This dirt is not apparent on the surface of a jar, but can readily be seen in broken fragments.

Not a single censer or offering-table was found at Jemdet Nasr, though the representation of one upon a sealing on a clay tablet proves that this type of utensil was known there (Oxford Editions of Cuneiform Texts, VII, p. vi). As this form of vessel was so commonly found in the graves of the "A" cemetery at Kish, it may be that we should have expected to find them only in a cemetery at Jemdet Nasr, and no cemetery has been located at this site.

SLIPS

The polychrome pottery of Jemdet Nasr was always coated with a slip smoothly laid on and semi-polished, which served two purposes: first, to close the pores of the pottery, and second, to provide a smooth surface on which to paint the design. Very little of the unpainted pottery has a slip, and the surface is usually rather rough. When a slip is found on plain ware, it is of a lighter color (usually cream) than the pottery beneath, and it shows no trace of polishing or rubbing down. The same is true of most of the monochrome pottery.

For the polychrome ware, either a cream or a red slip was used. It was polished with a rounded tool—perhaps a piece of bone—and the marks of the rubbing are usually horizontal, though in rare cases they are also vertical. The slip is always so smooth and well laid that one suspects that the jar was placed on the wheel again for its application.

It appears that the slip was colored red before being applied to the jar. In every vessel examined by me the color is the same at the bottom of the slip as on the surface, which could hardly have occurred if the red color had been applied to a slip of neutral tint. The slip was very thickly laid on the whole of the jar, including the bottom and sometimes inside the interior of the rim, except those portions to be colored otherwise; for a red ground would tend to show through another color. This red slip must have presented a handsome appearance when new, for one has only to see a jar thus decorated before its removal from the earth and while it is still damp to realize what a fine red it was. The color used for this purpose possibly came from Hormuz in the Persian Gulf. At the present day color-makers all over the world use a very pure deep red ochre that is quarried there.

The brilliance of the slips on some of the Jemdet Nasr pottery is only equaled by that of the red ware of predynastic Egypt and of the painted pottery of Mohenjo-Daro. But there the resemblance ceases; in style of decoration and in shape the three wares cannot be compared. Considerable trouble must have been expended in rubbing down these slips, for they are as a rule uniform in thickness and the polish marks are not always perceptible. Such is the uniformity of the slip that at first it was thought that each jar so decorated had been dipped. But this was not done because the pottery itself is unstained and the slip shows a tendency to separate itself from the pottery when being dried after removal from the soil. The dipping process would have proved more satisfactory probably, but it would have been more expensive.

Minute particles of blue are to be seen with a lens in some specimens of this red slip (Plate LXV, Fig. 38). Similar blue particles have been found in the red slip of pottery sherds, showing that it was an impurity of some kind in the ochre. This is only of interest in that it may help us one day to prove the exact provenance of the ochre. The exact composition of this impurity has yet to be ascertained.

The spouted jar in Plate LXIII, Fig. 25, is covered with a very uncommon pink slip, polished either with a pebble or a piece of bone. Another slip, which is unusual as far as Jemdet Nasr is concerned, is slate-colored. It is applied to a bowl of light red clay (Plate LXVII, Fig. 19) and to another vessel (Plate LXIII, Fig. 13), and was at first thought to be merely the result of accidental burning; but further examination disproved this.

A few jars have the lower portion coated with a red slip and a cream-colored slip applied to the upper portion to form the ground of a monochrome design. These jars have been included among the pottery classed as polychrome, though

perhaps they would be better described as "bichrome," the red slip not forming part of the design.

Two colored slips are used on the jar illustrated in Plate LXV, Fig. 30. The lower portion is coated with a smooth cream slip, and the shoulder, neck, and rim with red—a most unusual and interesting feature.

In the jar figured in Plate LXIV, Fig. 9, the whole of the vessel is covered with a cream slip, but it is only rubbed down on the upper part. This is the only example of this treatment, and the jar is decorated with two colors.

Occasionally (Plates LXIV, Figs. 11–12; LXV, Fig. 13; LXVI, Fig. 28, and LXVI, Fig. 5), the surface of the pottery was rubbed down to give it the requisite smoothness instead of applying a slip.

In many cases pottery was washed over instead of a slip being applied. This "wash" through which the color of the pottery shows was really the result of the potter moistening his hands and wiping over the face of the pot rather than of a serious attempt to make a smoother surface. It is only when another more refined clay is applied to the surface of a jar that we can term the result a "slip."

PAINTED DESIGNS

In decorating a polychrome jar, it seems that the red slip was applied first, except over those portions which were to be covered with the design. When yellow was used, this was added next, and finally black. The advantage of applying black last was that it concealed the junction of the two other colors. On the smaller portions of the design, at any rate, the paint was applied with a brush, the coarse hair-marks of which are often clearly seen. The brush probably was made from the rib of a palm leaf or by soaking and teasing out the end of any fibrous piece of wood. No serious attempt was made to achieve regularity of outline. In fact, the charm of most of the designs is their slight irregularity, as may be seen in Plates LXVIII–LXIX; LXXVII–LXXX.

In all cases, it was only the shoulder of the jar that was decorated, the neck, rim, and body being either left bare or covered with a red slip. The designs, which are broad and bold, are from necessity quite simple. Wide panels or metopes of color were used, separated by black lines and alternating with panels filled in with checkers, lozenge pattern, or hatched triangles. This last design is by far the most common. It seems to be the forerunner of the incised designs of triangles that are so common on the censers and handled jars found in the "A" cemetery at Kish. In fact, the occurrence of these similar designs at Jemdet Nasr and in the "A" graves would lead one to conjecture that no great distance of time separated the two periods.

None of the spouted vessels is decorated with these patterns, with the exception of a naturalistic design in black on the jar shown in Plate LXIII, Fig. 15, and a geometrical design on Fig. 5 of the same plate. This latter design was painted in plum color, and is an arrangement of metopes filled in with checkers, wavy lines, and conjoined triangles. A third jar is shown on Plate LXIII, Fig. 29, which is painted with the motive in Plate LXVIII, Fig. 11. With these

ornamented spouted vessels must be included Fig. 20 in Plate LXIII, which has three simple bands painted in a purplish black, and the very similar vessel in Plate LXXVIII, Fig. 4. The fact that spouted vessels are not usually decorated is not to be wondered at, for they were only used to hold water and the decoration in any case would have to be extremely simple. In fact, with the exception of the two jars mentioned (Figs. 5 and 15), the decoration of spouted vessels was confined to plain bands of color.

Most of the designs on the painted pottery, excluding those with frieze borders, are made up of two alternating motives, so that the same idea should not be repeated with resultant monotony. It is somewhat rare to find three motives in the decoration of a jar, despite the fact that there was a considerable number of designs from which to choose. The very prevalent use of broad masses of either red, yellow, or the natural color of the pottery to separate the two paneled motives emphasizes rather than detracts from the general effect, and considerable skill is shown in obtaining the result desired. None of the designs can be said to be overburdened with detail, a fault that is often found in very early work, whether in Babylonia or in other countries.

Another point to be observed is the very careful use of black. When broad masses of this color were employed, it was in nearly every case in connection with monochrome, and the effect was, therefore, relieved by the light surface on which the black was applied. Black was sparingly used in the polychrome decoration to form a contrast with red and to outline the designs.

SPOUTED VESSELS TYPE A Plate LXIII

The most common type of pottery at Jemdet Nasr is the spouted jar. It is made in every conceivable form, the size of the spout being in some cases out of all proportion with the rest of the jar. At no time in the history of Mesopotamian pottery is this type of jar found in such numbers and variety. The nearest approach to the upward pointed spouts of this type of pottery is to be found in Egypt and dated there to dynasties IV-VI. Though spouted pots are very rare in Egypt, they commence there as early as the second predynastic period. Their evolution can be traced down to dynasty XII, when the spout becomes a simple lip depression.

Spouted vessels were but little used at the period of the "A" cemetery at Kish, if the small number found in the graves be taken as a criterion, though it is possible that for some reason this type of pottery was not regarded as an essential feature of burial equipment. There is no doubt, I think, that much of the spouted ware of Jemdet Nasr was used for ceremonial purposes; in the early cylinder seals it is frequently portrayed as being thus used. Jars (Figs. 24, 26-27) are indeed so roughly made, and their capacity is so small that one is led to think that they were intended for use at some particular ceremony and that they were then discarded. A water jar, to be of any use, especially in the East, must hold sufficient water for more than one long drink, and many of the spouted vessels found do not fulfil this requirement, though they would serve as libation vessels.

The mode of attaching the spout was to bore a hole through the shoulder of the jar and to place the lower edge of the spout against it. The union was made with a strip of clay, and the line of junction carefully wiped over so as to hide all traces of the joint. This gave a very neat appearance, but hardly a strong joint. The large number of detached spouts and spoutless vessels that were found on the site was doubtless due to the clay of spout and vessel not being of the same degree of plasticity and therefore failing to adhere properly.

The spouted jars illustrated in Plate LXIII have been arranged according to the form of the rim rather than the general shape. Those with perfectly plain rims are followed by a group with overhanging rims which were nearly as common as the simpler form. Farther on, a folded-over type of rim is shown, followed by a group of jars each of which has some unusual feature.

Jars 1-4 are of a light red clay, the last three being coated with a cream wash. In each the upper part is well finished, but not so the lower portion, which, as stated before, is a common characteristic of the unpainted pottery of Jemdet Nasr.

The rim of Fig. 5 is missing, unfortunately, but there is reason to think that it was quite plain. The jar is coated with a straw-colored slip, and upon the shoulder and upper part of the body designs were painted in plum-colored paint. These are quite simple, consisting of vertical panels filled in with checkers and wavy lines, and conjoined triangles as seen in Plate LXVIII, Fig. 13.

Fig. 6 is a very well made jar with a cream-colored slip.

Fig. 7 is of little interest, but Fig. 8 has been illustrated because its slightly splayed neck is unusual. Unfortunately, the portion that is drawn is all that was found of this jar.

The fine specimen, Fig. 9, has a beaded rim. It is somewhat roughly made, and its outer surface is undulating. The clay of which it is made is yellowish red in color and contains a rather unusual proportion of dirt.

Fig. 10 has a peculiar spout which, instead of projecting upwards, is more or less horizontal. That this is not an accident is proved by other spouts being found of a similar nature.

Fig. 11 is a well-made jar of a drab-colored clay which has a heavy admixture of sand; it is coated with a thin cream-colored slip.

Fig. 12, though otherwise quite ordinary, has one unusual feature: a line scored round it well down the body of the jar, instead of in the customary position round the shoulder.

Fig. 13 is quite typical, but Fig. 14 shows two unusual features: the end of the spout is finished off with a beading which gives it a more impressive look; and the slip is a slate gray color.

Fig. 15 is a most interesting jar, both in shape and decoration. The paste of which it is made is grayish green in color and soft; it contains a little foreign material, but no sand. There is no wash or slip. The shoulder of the jar is decorated in black with a design resembling palm-swathes (Plate LXVIII, Fig. 2); this is the only jar found at Jemdet Nasr thus decorated.

Fig. 16 is unique. Near the neck there is an aperture that can only have belonged to a spout, and close by the base on the opposite side there is another and larger hole that may have been part of a hollow handle. Judging from its size, this jar was probably a libation vessel. The clay of which it is made is light red in color, and the upper portion of the vessel is considerably better finished than the lower.

Fig. 17 is well made of a light yellowish clay mixed with a brown material that appears to be river-clay. Its spout is unfortunately missing.

Fig. 18 has a folded rim, and is coated with a thin slip that is now straw-colored.

Fig. 19, which has a very important looking spout, is excellently finished, and has a well-defined flat base. It is coated with a cream-colored slip.

The imposing jar, Fig. 20, has a small, slightly concave base. Its shoulder is decorated with three bands of plum-colored paint. The lower portion of the jar shows signs of having been pared with a knife. It was made of a light red clay thinly coated with a cream slip.

The next jar, Fig. 21, bears traces of having been painted in black and red. As it was blackened in a fire and is also much weathered, the design is too indistinct to be made out.

Fig. 22 has a very unusual beaded base which is perfectly flat beneath. The ware is light red in color, and the surface, though not rubbed down, is very smooth.

The interesting jar, Fig. 23, has a very unusual feature; the junction of shoulder and body is notched. It is made of a straw-colored clay mixed with river-clay to fatten it. The notched shoulder recalls some of the pottery found in the "A" cemetery at Kish. This notching or crimping looks surprisingly like an imitation of stitching used as ornament, though it certainly serves to unite more firmly the separately made body and shoulder of the jar. If, however, this notching be actually a survival of stitching we would expect to find more examples than we do in this early ware. Compare with the pottery in Plates IX, X, XLVIII, XLIX, of this volume.

Figs. 24, 26-27 were probably only used for ceremonial purposes as their sizes preclude them from holding much water. Judging from their elongated shape, they would appear to have been held by the base. The base of Fig. 24 has been trimmed down with a knife to give a smoother grip. Fig. 26 is heavily coated with a cream-colored slip and, like Fig. 24, is made of a light red paste mixed with a large proportion of sand and lime. The clay used for Fig. 27 is light yellow in color and mixed with river-clay. Figs. 26-27 are also illustrated in Plate LXXVI, Fig. 8. Compare with type XCI of "Ur (Al 'Ubaid)," Vol. I, Plate LX.

Fig. 25 has an unusual feature, namely, a ring-base. It is covered with a light pink slip which has been polished with a smooth instrument. The marks caused by the polishing are horizontal in direction.

Fig. 28 has a curious rim, which, though simple in form, has been ornamented with scored lines. This vessel is better baked than usual, and the light red paste of which it is made contains sand and lime. It has no slip.

Fig. 29 is of particular interest, for the upper portion of the jar, excluding the neck, is divided into panels containing the design shown in Plate LXVIII, Fig. 11, painted in a purplish red. Owing to its being in perfect condition, the clay of which it is made cannot be properly examined.

The very interesting jar, Fig. 30, is made of a gray paste, which contains no sand or other foreign matter, but has a soapy touch. The surface is smooth, but unpolished. The strap-like handle is 20.50 mm in width.

FOUR-LUGGED VESSELS TYPE B Plate LXIV, Figs. 1-15

This type also was a common one. The lugs or handles are always arranged at equal distances around the jar. They are somewhat roughly made and in nearly every case perforated horizontally—never vertically—by means of a fine tool. No attempt was made to smooth off the ragged edges of the holes so made. Occasionally, a jar or fragment of a jar was found with unfinished lugs which had been left unbored. Again, in some of the larger vessels, the lugs were very elongated with a downward projecting tongue to give a stronger attachment. An example of such a lug is seen in Plate LXXVI, Fig. 10, and, it will be noticed, bears a strong accidental resemblance to an animal's head, the holes suggesting eyes. There is a possibility that these lugs were likened to an animal's head (cf. a dish found at Tépé Aly-Abad, *Mém. Dél. en Perse*, VIII, p. 127, Fig. 238).

Sometimes the lugs were carelessly attached, with the result that they fell off and left but little trace of ever having existed.

Lugged vessels are nearly always painted in polychrome, especially those of the shape of Figs. 1-3, 7-8. They are invariably well made and finished, and were doubtless valued. Further, their flat bases suggest that they were used for valuable commodities. In fact, the wide mouths of the jars and the heavily polished slip with which the majority are coated lead one to the belief that they were intended to hold thick oils or unguents. These commodities would have attracted mice or rats or that more serious plague, ants, and the perforated handles were probably provided to hang the jars well out of their reach.

The line that is frequently scored round the upper part of the jar to link up the holes through the lugs may represent a cord that served either to fasten down a cover or to suspend the jar. An alternative suggestion is that this line between the lugs was scored when the jar was still upon the wheel, and that the lugs were placed upon it to ensure their being at an equal height all round the jar. In those cases where the lugs failed to adhere properly to the jar the line is seen to be continuous. I think, however, that my first suggestion is the more probable, as it explains the rare, narrow, hatched band between the lugs, which most certainly suggests a cord.

Professor Langdon found two collections of this type of jar, which were evidently models. They were too well made to be the work of children, and may

have been thrown out temple offerings. The jars in both groups seem to have been purposely broken. Those of one group were washed over with red paint, those of the other were of gray ware instead of the usual light red.

The notched ribbon around the shoulder at the base of the lugs, which is well shown in Plate LXXVI, Fig. 10, is a most unusual decoration in this type of jar. The rim is also exceptional for this type.

No. 1 is typical of the group, and is coated with a slip now of a greenish gray color.

The slip of Fig. 2 is cream-colored.

Fig. 3 is a portion of a jar of which only the part illustrated was found. It is exceptionally well baked, and the ware is very hard. The neck and body were painted black and decorated with single lines and hatched bands.

Jars 4-6 are all unusual forms and have no slip. Nos. 4 and 6 are made of a light yellow clay. Their lugs are very small, but all perforated. Fig. 5, which is hand-made, has an attempt at a ring-base.

No. 7 is thick for its size, though in other respects well made. It is entirely coated with a burnished slip, which was rubbed horizontally, as is shown by the markings left behind.

No. 8, also illustrated in Plate LXXVI, Fig. 12, is coated with a cream slip. The upper portion of the jar is painted red with a broad band of vertical metopes of crisscross hatching alternating with plain panels bordered on either side with three vertical lines. A thick roughly drawn line links up the plain and hatched panels around the jar.

The whole of No. 9 is coated with a smooth, but unpolished, cream-colored paste, which appears to have been rubbed down on the upper portion of the jar. The lower portion of the shoulder bears a design in purplish black and red, which is shown in Plate LXVIII, Fig. 6.

Jar 10 is of greenish gray paste which is now very soft and friable. The shoulder of this jar is ornamented with a design of simple triangles in black. Though well made and very regular, this jar has no slip.

Figs. 11-12, each provided with four very small lugs, are of a rare type. They are made of a light yellow clay, and are comparatively thin for their size. The surface is smooth and almost polished. Between the lugs there is a band of cross-hatching, done with a single point and bordered above and below by a horizontal line. Very similar pottery has been found at Susa and dated there to the second period (*Mém. Dél. en Perse*, XIII, Plate XXXII).

The substantial jar, Fig. 13, is entirely coated over, even to the inside of the rim, with a fine red slip carefully burnished in a vertical direction. On close inspection of the slip a number of minute shiny particles resembling mica are visible. Mica is very common in the red slips of the Mohenjo-Daro pottery.

No. 14 is very roughly made and striated below the level of the lugs. Its paste is softly baked, drab-colored, and very dirty; it is heavily mixed with sand

with brownish particles here and there which suggest an admixture of river-clay. A certain amount of charcoal is also present. There is no slip.

No. 15 seems to have been covered formerly with a thick red slip which has disappeared through the action of salt.

SINGLE-LUGGED VESSELS TYPE C Plate LXIV, Figs. 16-20

This type of jar, which is not so common as the four-lugged kind, has only a single lug which is placed near the top of the shoulder. It will be noticed that these jars all have rounded bases; yet it is doubtful if they were suspended, for, if so, the angle at which they would necessarily have hung would not have allowed of their being completely filled. A single lug might, however, have served to secure a cord holding down a cover. It should be noted that a line which may represent a cord is often scored around the jar at the level of the hole in the lug.

Vessels of this type were made of a light red or a drab-colored clay, very porous and heavily mixed with sand or lime or with both. They are not, as a rule, particularly well baked, and are thick for their size.

No. 16 is coated with a straw-colored slip. It was found broken, and pieces of it are missing.

No. 17 is a well-made jar with a line scored round the shoulder. It has a simple flat lug on one side with the upper part missing. There is no hole in this lug, and it resembles the plain handles sometimes, but rarely, present on the "handled" ware of the "A" cemetery at Kish.

No. 18 is a fine piece of pottery of a drab-colored ware heavily mixed with sand and lime. Its surface is smooth, and was once covered with a thick red slip. It has a line scored round the shoulder.

Nos. 19 and 20 closely resemble one another, both in their clumsy appearance and in the fact that the upper portion is smoothly finished off, whereas towards the base the workmanship is rough.

Vessels of this type are but poorly represented at Susa and Musyan. They have been found in the Al 'Ubaid II cemetery, and one specimen from that place is marked with a cord-like line that may be a survival of the similar lines round the vessels of the four-lugged type (Excavations at Ur, I, Plates LI, LIII).

STRAP-HANDLED VESSELS TYPE D Plate LXIV, Figs. 21-32

It was a surprise to find that well-made, flat, strap-like handles were a comparatively common feature of the pottery of Jemdet Nasr. They are not known elsewhere in Mesopotamia, as far as I can discover, until very late times; not a single vessel possessing a handle of this kind was found in the "A" cemetery, where all the handles were of a type not found at Jemdet Nasr. Why such a convenient means of lifting a jar as the strap-like handle should have died out, it is difficult to say. Handled vessels are frequently represented on the earliest seals of Elam (*Mém. Dél. en Perse*, XVI, Plates XI, Fig. 190; XII, Fig. 193; XIV, Fig. 216). In Egypt the handle is known in the Badarian period and also in dynasties I and III-IV, but was not at all popular.

These handles may have been copies of a loop handle originally made of some plaited fiber, such as rattan or grass. Most of the designs on the pottery seem to have been influenced by basket-work. The decoration in panels and the common crisscross decoration are highly suggestive of some loosely woven material.

The pottery of this type is seldom well baked, and the surface is roughly finished and often very irregular. The handle is in most cases as roughly made as the body of the jar and consists merely of a flat strip of clay, varying from 15 to 28 mm in breadth, which was fastened to the jar in a somewhat slovenly manner. Scored lines are common on this type of pottery and form the only decoration.

The ware of Nos. 21, 24-25, 27, 30-31 is of a light red or drab-colored clay heavily mixed with sand or lime. The clay of which Nos. 22-23, 26 and 29 are made is light yellow in color, with or without an admixture of sand or a little river-clay.

No. 21 is a soft, dirty, drab paste. The width of its handle is 17 mm, and two scored lines round its shoulder are its sole decoration.

No. 22 has a heavily scored shoulder, and is roughly made.

The base of No. 23 (cf. also Plate LXXVI, Fig. 12) is very uneven, and the jar shows signs of having been burned.

The handle of No. 24 is 15 mm wide. Its shoulder is scored with five lines of which only three are shown in the plate, and it is coated with a cream slip.

No. 25 has a loop-like handle, and there is a single line round its shoulder. It is very roughly made, and may have been the work of a child.

The handle of No. 26 is 18 mm wide and out of proportion to the rest of the jar. The clay is straw-colored, containing little or no sand, and is very porous.

No. 27 is made of an unusual material, a porous light red clay containing a large quantity of a red clay of a considerably darker color. Its handle is 35 mm wide and very roughly attached. There are six lines scored round the shoulder of the jar.

No. 28 has a roughly made handle, 35 mm wide, which was warped in the kiln. It is made of a yellow clay mixed with very fine sand and a dark material resembling charcoal.

The handle of No. 29 is 25 mm broad. It has been squeezed in against the side of the jar, which is warped and misshapen.

Only a short fragment, 35 mm wide, remained of the handle of No. 30. The body of the jar is very uneven, and has very pronounced finger-grooves inside.

No. 31 is a roughly made, badly baked jar with a handle 27 mm wide.

The interesting jar, No. 32, is evidently copied from a gourd. It is well made, but, being unbroken, its paste could not be examined. The jar is covered with a cream-colored slip. The shoulder is decorated with four scored lines (see also Plate LXXVI, Fig. 7). A very similar jar to this one was brought by an Arab to the camp at Kish and is now in the Ashmolean Museum.

POTTERY WITH PLAIN RIMS TYPE E Plate LXV, Figs. 1-14

Figs. 1-14 in Plate LXV have been grouped together on account of their rims and not their general shapes, which are somewhat varied, because the number of examples found is insufficient for a closer classification. They are all roughly made, probably for everyday use. The clay of which they are all made unless otherwise stated is light red in color and contains a considerable proportion of sand.

Fig. 1 is roughly made, with an undulating surface, and has marked finger grooves inside. As it is unbroken, the clay of which it is made could not be examined closely.

Fig. 2 is better fired than the majority of these jars. It is made of a sandy drab-colored paste containing a small amount of dirt.

Fig. 3 is porous and light red in color and contains a heavy admixture of sand. It is poorly baked and the jar is thin for its size.

Fig. 4 was twisted in firing and its lower portion is warped. It has a thin cream-colored slip.

Each of these four jars has a flat base.

Fig. 5 has a line scored round its shoulder and is made of a porous red clay heavily mixed with sand. It has a pointed base.

The squat-shaped jar in Fig. 6 was badly blackened by fire and the ware of which it was made could not properly be determined.

Fig. 7 is entirely coated with a burnished red slip, even underneath the base. It is made of a porous red clay containing a considerable quantity of lime.

Fig. 8 is roughly made and was badly blackened in the fire that burnt down the buildings of Jemdet Nasr. It is thick for its size and has a rather spreading rim.

Fig. 9 has a small almost pointed base. It is well made with a smooth cream-colored slip.

Fig. 10 has a most unusual neck and a pointed base. The surface is smooth, but unpolished and much blackened. The clay could not be examined, as the jar is unbroken.

No. 11 is also unbroken and unusual in form. It is ornamented by a broad red line around the base of its spreading neck.

The upper portion of No. 12 is smooth, but its lower part has been trimmed off with a knife in places. The neck is exceptional in shape and looks as if it had been folded over when on the wheel.

The very small hand-made jar No. 13 is perhaps the work of a child. A very small hole in the side suggests that it once had a spout.

No. 14 is of a greenish-colored, sandy clay covered with a thin cream wash. The base is small and of the true "ring" type.

POTTERY WITH OVERHANGING RIMS TYPE F

Plate LXV, Figs. 15-38

The jars grouped under this type show a considerable diversity of form, but the rim is the same in all cases. When on the wheel, the clay to form the neck was raised up considerably higher than in the finished jar; it was then folded over and pressed down again, so that the under side of the folded rim forms an angle of 90° with the neck.

This variety of rim is also very commonly found both in the spouted and other types of jar. A tool seems to have been employed in shaping these rims, for they are invariably smooth and well finished except on the under side. Moreover, they show a certain amount of striation, which is so regular that it suggests the use of some implement rather than of the fingers. Jars with a rim of this type are as often painted as not. They were made of a clay that burned a light red color or a clay that preserved its drab color in the kiln. Both clays were sometimes mixed with sand or lime, or both.

No. 15 has a smooth brown surface which is almost polished.

No. 16, which is also shown in Plate LXXVI, Fig. 4, has a design of triangles in two registers upon its shoulder, each triangle being apex upward and filled in with crisscross hatching (Plate LXVIII, Fig. 5). The paint used is of a violet tint, and was applied over a cream slip. The undecorated portion of the jar is coated with a red slip. Owing to the action of salt it is impossible to say whether the surface was also polished, but by analogy with similar jars this is more than probable.

No. 17 appears also in Plate LXXVI, Fig. 4. It has a square base—a most unusual feature. It is covered with a thick slip of a yellowish color which shows signs of having been polished, though it is badly blackened by secondary burning here and there. The shoulder bears traces of painting which are impossible to make out. Compare this vessel with that shown in Plate LXXIX, Fig. 3.

The upper portion of No. 18 is smooth and well made, but the lower portion is roughly fashioned, and the base poor and unsteady. The clay of which the jar is made is dark red in color and very dirty in appearance.

No. 19 was formerly coated with a highly burnished red slip.

No. 20 was clearly made in two pieces, for, though the neck and rim are missing, the present upper edge is quite level, as is seen in Plate LXXVI, Fig. 4 (the second jar). The shoulder is decorated with a design in two registers (Plate LXIX, Fig. 7). The colors are black, yellow, and red, the black being used to outline the designs which are red, and the yellow as a ground. The body and base of this jar are covered with a deep red slip which has been polished in a horizontal direction.

No. 21 is a squat globular jar, undecorated in any way and without a slip.

No. 22 also has no slip, but it is noteworthy on account of its very broad base.

No. 23 was at one time coated with a red slip, and had a design painted on its shoulder which is now, however, very indistinct.

The imposing jar No. 24 was apparently once covered with a highly polished red slip, but is now badly blackened by fire.

No. 25 has an unusual rim which instead of being sharp is slightly flattened at the outer edge. The light red clay of which it is made has a strong admixture of sand and lime, and also contains a considerable proportion of a black substance resembling charcoal. The surface is smooth, and was at one time covered all over with a finely burnished red slip. The shoulder is decorated with triangles, each with the apex upward, in alternate red and black (Plate LXIX, Fig. 8). The red triangles are filled in with that color, the others with a black crisscross hatching.

No. 26 has no slip, but No. 28, of similar type but somewhat out of shape, is thinly washed with a levigated clay. The jar in the middle of this group, No. 27, was formerly coated with a red slip which has now almost entirely disappeared. In its paste there is a heavy admixture of very fine sand.

No. 29 was also once covered with a highly burnished red slip.

No. 30 is peculiar in that its body is coated with a smooth cream-colored slip, whereas the shoulder, neck, and rim are painted a deep red. As a rule, when two colored slips are employed, the shoulder is cream-colored, and the body red.

No. 31 is of a badly baked, drab-colored ware which shows signs of accidental burning.

Nos. 32-33 are of no particular interest; they are undecorated and have no slip.

No. 34 (also shown in Plate LXXVI, Fig. 4) is unique, for the body is painted in two colors, whereas the upper part has a red slip only. The design on the body consists of broad, vertical metopes of red edged with black, alternating with blocks of the natural color of the pottery, each of which has a bluish black line down the center, very similar to Plate LXIX, Fig. 18, except for the zigzag lines.

No. 35 is of little interest. It is coated with a cream-colored slip.

No. 36 has a rounded base, and is somewhat irregular in shape. It is covered with a whitish gray slip.

The rim and body of No. 37, which also has a rounded base, are coated with a polished red slip. On the neck and shoulder, which are covered with a lighter slip that is now slightly pinkish, red triangles are painted, apex upward and with the edge outlined in black paint.

No. 38 has a flattened edge to its rim and a ring-base. The whole of the outer surface of the jar, except the shoulder, and even the interior of the neck are heavily covered with a plum-colored slip. The shoulder is decorated with broad, vertical panels of the same plum color, alternating with panels of the natural color of the pottery filled in with a crisscross hatching. Owing to the action of salt much of the slip and decoration has disappeared.

POTTERY WITH BEADED RIMS TYPE G Plate LXVI, Figs. 1-8

It is difficult to assign jars Figs. 1-8 in Plate LXVI to any particular section owing to their simple and yet varied forms and their uninteresting rims. The

latter, however, present sufficient similarity to warrant these vessels being grouped together on the basis of the shape of their rims. Most of this pottery is undecorated, and where designs occur they are of the simplest.

No. 1 is well shaped and made of a light red ware washed over with a light-colored clay.

No. 2, which is unusually thick for its size, is made of an unctuous-looking yellow clay containing a considerable amount of what appears to be a dark-colored river-clay.

The clay of No. 3 is of a dark hue, very porous, and heavily mixed with sand, with traces here and there of charcoal. The lower portion of the bowl is very uneven, especially on the inside, where the grooves left by the potter's fingers are conspicuous.

No. 4 is made of a very soft, porous, drab-colored paste tempered with sand.

No. 5 is hand-made and thick for its size. It is made of a light red clay which is free from foreign material, and has a smooth, but unpolished surface.

No. 6 is a yellow ware, light and porous.

No. 7 is light red in color, and its paste is heavily mixed with sand. It is very poorly baked.

No. 8 is well made and shaped, of a clay that has burned a light red color.

BEAKERS TYPE H Plate LXVI, Figs. 9-15

Judging from its shape, this type of jar which is comparatively rare at Jemdet Nasr appears to have been used only for drinking. The comparatively small size and open mouths of these vessels preclude their having been intended to hold water for any length of time.

Nos. 9-10 are two most interesting vessels, their distinguishing feature being the curious edge-like base formed by squeezing the sides together. It seems probable that their bases were thus shaped to fit into a special holder, as otherwise they will stand upright only in loose earth or sand. Both are hand-made, badly baked and thick for their size, one of a light red clay, the other of yellowish red. They show signs of having been burned inside; but whether this was accidental is difficult to say, especially as the two were found together.

No. 11 is made of a porous light red clay; it has a small flat base showing the focused striations caused by the separation of the jar from a column of clay on the wheel by means of a cord.

No. 12 somewhat resembles the beakers found in the "A" cemetery, except for the folded-over rim. It is well made and smooth outside, but heavily marked with finger grooves inside. The ware is a dirty-looking, light red clay containing minute fragments of charcoal.

No. 13 is probably the work of a child. It is small and very roughly made of a light red paste.

No. 14 is a graceful jar, of a light red clay containing a little lime.

No. 15 is very rough and badly warped in the firing. Its base is marked with focused grooves. It is made of a light red clay mixed with a little sand and containing comparatively large pieces of foreign matter, such as dirt and charcoal.

STRAINERS TYPE J Plate LXVI, Figs. 16-19

These four strainers are of considerable interest. Each has a small hole in the base measuring either about 5 mm or 12 mm in diameter. In addition, three have a pair of smaller holes placed close together just above the middle of the vessel. No. 17, however, has only one hole in its side, measuring 4 mm in diameter. It is possible that by means of these holes, which seem too small to admit the ends of a forked stick, the strainer was lashed to a handle to form a ladle. All these vessels are made of a light red clay mixed with a little sand, and they are very indifferently baked. Although strainers were found in the "A" cemetery at Kish, none is quite like those from Jemdet Nasr. Possibly these strainers were once filled with a porous material such as palm fiber or wool.

DISHES AND PANS TYPE K Plate LXVI, Figs. 20-30

In some of these dishes the base is rounded (Figs. 20-21, 26, 29-30), which suggests that they were laid either on the necks of larger jars or in loose earth or sand. The pan-shaped utensils with wide, flat, steady bases were very probably used for bread-making (Figs. 23, 27-28).

No. 20 is a dish with a vertical rim, and is washed over with a cream slip.

No. 21 is a well-made utensil with a smooth unpolished surface.

No. 22 is one of a large number of hand-made dishes, all alike, which were found together. They are very roughly made, as shown in Plate LXXVI, Fig. 7. They are of a light red clay, and are flat-based.

No. 23 is an unusually shallow dish. It is made of an imperfectly fired greenish gray clay in which there is a considerable amount of some red material which resembles powdered pottery.

No. 24 may possibly be a saucer in which to stand a jar, which may also be the case with Nos. 22 and 25. The latter has a flat base with strongly marked focused grooves.

No. 26 is a curious dish with a very irregular base and a well-finished, band-like rim.

No. 27, which is a very heavy pan, is made of a dark red clay containing a great deal of sand and lime and some other ingredient that looks like charcoal.

No. 28 is especially interesting in that the ware is a dark-colored, almost black clay containing a considerable quantity of sand. Both the inner and outer surfaces were polished with a smooth instrument whose marks run in all directions. This pan is handsome, very thick for its size, and poorly baked. In appearance and technique it is very similar to pans that were found in the "A" cemetery and approximately dated to 3000 B.C.

No. 29 is of no particular interest, and No. 30 is very similar in general appearance to No. 26, but better finished and baked.

CUPS AND BOWLS TYPE L Plate LXVII, Figs. 1-27

The cups found at Jemdet Nasr are simple in form and closely resemble those of the early period of Kish. The flat base is marked with the focused grooves caused by cutting off the cups from a column of clay with a cord. In the East, at the present time, the potter when making the smaller and rougher types of vessel puts a sufficient amount of clay on his wheel for three or four, cutting off each cup as it is finished from the top of the pillar of clay. The large vessel, Fig. 1, was probably made separately, as it would be difficult to make it by the process described above.

All the cups, unless otherwise stated, were made of a light red clay, sometimes mixed with sand or lime, or even with both these materials. They are roughly made, and their interiors are nearly always better finished than their exteriors. Very few have a slip, and only in rare cases are they ornamented with simple bands of color red or black. From the great number found, this type of vessel must have been in common use, and readily discarded when not required owing to its cheapness. The small size and the thickness of this kind of pottery, as illustrated by Figs. 1-7, led to many being preserved unbroken. But owing to its simple shape this type of pottery is of no use in dating a site, for it is found in great numbers up to a comparatively late period in Mesopotamia.

Nos. 1-7 are of little interest from a technical point of view.

No. 8, which is thin for its size, is of a different shape, and is coated inside and out with a thin cream slip.

No. 9 is also better made, but otherwise of little account.

No. 10 is very rough; from its size it may have been intended for or made by a child.

Nos. 11-13 were rather better made and thinner than the majority of these cups.

No. 14 has a curiously squat form, and from its very small size may have been the handiwork of a child.

No. 15 is very coarse, and its outer surface shows strongly marked finger-grooves.

No. 16 is of no interest, but No. 17 is unusual on account of its extraordinary thickness. Its inner surface is heavily marked in spirals by the fingers of the potter. The clay is drab-colored and contains a considerable amount of dirt.

There is little of interest about Nos. 18-20, except that No. 19 is coated with a slate gray slip.

No. 21 is one of the few cups that are decorated. A brownish black was used for this cup, but red is the more common color. The paint was applied to the plain surface of the pottery without an intervening slip. This cup is of a porous straw-colored ware, and is soft-baked.

Nos. 22-23 are both hand-made with a beveled rim; in all about six examples of this shape were found. Most of them are very poorly baked and roughly

made, and none of them has a slip. Bowls with this type of rim have been found at Susa (*Mém. Dél. en Perse*, I, p. 84, Figs. 118 and 121; p. 75, Fig. 91), and Abu Shahrein. This type of bowl was found by Campbell-Thompson in burials, but no painted pottery was associated with it (*Archaeologia*, LXX, 1918-20, Fig. 3, No. 4; Fig. 4, No. 10; see also p. 111). The combination of beveled rim with a rough appearance should be of use in dating other sites where they might be found.

Nos. 24-27 appear at first sight to be unfinished cups. That this is not the case is proved by the fact that they were baked. The knob in the interior of the base is difficult to explain if these cups were used only for drinking. Nor could it be the result of an accident, though the projection in the base of No. 24 was perhaps due to carelessness or haste. Similar objects have been found at Mohenjo-Daro, where they were certainly used as jar covers. They are still used for this purpose by the modern inhabitants of Sind. Similar dish-like jar-covers with a knob in the middle by which to lift them have been now found at Gerar in Palestine, and have been dated there by Petrie to the Philistine period.

JAR STANDS TYPE M Plate LXVII, Figs. 28-33

Though these curious objects may not be jar stands, no other suggestion as to their possible use offers itself. They are therefore included here among the pottery. These objects of which six examples have been drawn are in appearance very like the old-fashioned "pork-pie," a nickname which was at once attached to them when they were found. They occurred in great numbers at Jemdet Nasr, and after a few of the best had been selected, the remainder were left behind. These stands (?) are all solid pieces of pottery; the base is flat with focused grooving and the upper edge ornamented with a single or double row of notches. The tops of some are flat, but many are slightly concave in the middle; in No. 30 very perceptibly so. These stands vary considerably in make, some being well shaped and finished, and others very rough. Owing to their solidity, their state of preservation is excellent. If any are found on other sites, they will prove invaluable for dating. None of these jar stands has a slip. They are all made of either a light red or a yellow clay.

Possibly these objects were used as stands for the finer make of painted pottery, especially those jars in which the base is covered with a red slip.

Some difficulty seems to have been experienced in detaching these objects from the wheel, even when they had been cut off by means of a cord. Nearly all of them show deep finger-markings close to the edge of the base, which may, however, have been caused by their very considerable weight when lifted from the wheel.

UNUSUAL TYPES Plate LXVI, Figs. 31-43

The jars grouped under this heading show a great diversity of form, and are mostly unusual. Several of them are ornamented with incised designs or with a notched beading.

No. 31 is made of a poorly baked dark red clay which contains a great deal of sand. It is decorated with three broad bands of red. Its square-edged, ledge-like rim is a rare feature in the Jemdet Nasr pottery. The interesting cup-like base is very similar in appearance to the bases of the "cup-based" pottery from Kish (Plates XIV, Figs. 8-18; LII, Figs. 1-9, of this volume).

No. 32 was only a fragment, but the complete jar seems to have been of the same type as No. 31, though its rim was slightly different. Two broad bands of a purplish black served to ornament it.

No. 33, which is made of a yellow clay mixed with a clay of dark brown color, is coated with a light yellowish slip.

No. 34 is made of the same kind of clay, but has no slip.

The very ornamental jar, No. 35, is the only one of its kind. It is made of a drab-colored clay containing an unusual amount of fine sand. The raised beading around its shoulder is carefully marked with an incised chevron design done with a sharp point.

No. 36 is of a porous, yellowish red clay containing a little lime. A notched incised line decorates the shoulder, and the upper part of the neck and the rim are ornamented with fine, obliquely incised lines.

The small jar No. 37 is embellished with a double row of notchings. As it is unbroken, the clay of which it is made could not be examined.

No. 38 is an object of great interest. It appears to be a jar cover, and is the only one of its kind found at Jemdet Nasr. The body could not be properly examined, as the cover is unbroken; its surface is covered with a cream slip.

No. 39 is made of a fairly well baked, porous red clay containing a great deal of sand and a little lime. It is entirely coated with a thick red slip, even underneath the base, except on the shoulder which is decorated with vertical bands of red edged with black, alternating with yellow bands also edged with black and with their interiors filled in with crisscross hatching. A scored line runs round the top of the shoulder. The ring-base is a noteworthy feature of this jar (for design cf. Plate LXIX, Fig. 12).

The flask-like jar, No. 40, has a notched beading around the base of the neck. Unfortunately, the rim is missing. This jar is well made, but the upper portion shows considerably more finish than does the lower part of the vessel.

No. 41 may possibly be a jar cover rather than a dish, and has therefore been included here. It is well made, but being unbroken its body could not be examined.

No. 42 is made of a dark gray paste which has been hard baked. Indeed, the color may be due to overfiring, for the vessel is almost vitrified. The shoulder is arranged in tiers each of which is carefully notched around the top.

No. 43 is decorated with three bands round the shoulder, filled in with oblique incisions made with a fine point. The neck and rim are missing, but the break suggests that these were oval in section. The clay is gray green in color with a

large admixture of a brown substance, but no sand. The surface of the jar is somewhat rough and striated.

A very peculiar form of handle (Plate LXX, Fig. 3) occurs on a fragment of pottery picked up on the site. It is ledge-shaped with a rod-like portion projecting horizontally outward from the middle of it. We were not fortunate enough to find the jar to which this handle belongs, but it must be recognized as a distinct type. Owing to the solid construction and peculiarity of the handle, it will doubtless be at once recognized if found on other sites (3350; Field).

The interesting theriomorphic pottery jar in the shape of a pig illustrated in Plate LXXVI, Fig. 2, must, of course, be included in the pottery. It is somewhat roughly made and measures 24.13 cm long. This must have been an object of ceremonial use, for it would have had to be filled and emptied by the mouth which has a very narrow aperture.

II. MONOCHROME AND POLYCHROME DESIGNS

In Plates LXVIII–LXIX will be found some of the designs painted on the pottery from Jemdet Nasr. Many of the complete jars are in too bad a state of preservation for the patterns on them to be readily recognizable. On the other hand, many of the designs on fragments of pottery are well preserved and could be readily copied.

In the plates the colors are represented as follows: In the monochrome pottery, black represents either that color or red. In the polychrome pottery, black represents black, and also dark red when two kinds of red are used. Light red is shown by stippling, and a yellow or a cream slip by white. It was found by experiment that the usual heraldic representations of colors would greatly confuse the designs; they might lead to the supposition that the markings used to show the colors were actually designs on the pottery.

All designs in Plate LXVIII, Figs. 1–17, with the exception of Figs. 12, 15–17, are in monochrome, the color used being either black or red, and in the majority of cases painted direct on the body without an intervening slip. These designs, as will be seen, are very bold and free, and they are not complicated with unnecessary detail.

No. 1 is painted in red on the surface of a jar now in the Ashmolean Museum at Oxford. The design of hatched triangles is a common one at Jemdet Nasr; but the additional feature of the two snakes is rare, and only one example of this motive (on a small sherd) was found, though it is fairly common at Musyan, Tépé Aly-Abad, and at Susa, first and second periods (*Mém. Dél. en Perse*, VIII, p. 96, Fig. 139, and Plate VII). This motive was frequently employed in antiquity, doubtless on account of its simplicity.

No. 2 is a naturalistic design of which only this one example was found. It is painted in black and repeated round the jar, which has a grayish green body with no evidence of a slip. It was probably intended to represent palm leaves, but the drawing is so roughly done that any kind of leaf might be its subject. The jar upon which this motive is painted is shown in Plate LXIII, Fig. 15 (2494; Oxford).

No. 3 is painted in purplish black on the natural surface of a fragment of pottery of a friable light yellow clay mixed with a little river-clay (3425; Oxford).

No. 4 is unusual in that the triangles are entirely filled in, instead of being left bare or hatched. They are painted in purplish black on the natural surface of the pottery (3457; Field).

No. 5 is a very common design. It is painted in black on the cream-colored slip with which the shoulder of the jar is coated. The black has a slightly violet hue in certain lights. The remainder of the jar, i.e., the interior of the neck, rim, body, and base, is coated with a thick red slip (Plate LXV, Fig. 16. 2475; Baghdad).

No. 6 is copied from an unbroken jar (Plate LXIV, Fig. 9) coated with a smooth, but unpolished cream slip. The color is purplish black (2944; Oxford).

No. 7 is painted in a purplish black on the natural surface of a pottery fragment (3426; Field).

No. 8 shows the decoration on a potsherd of a light red clay mixed with a little lime. The design is a broad band painted in a warm black on the natural surface of the pottery. The rough five-pointed star above the band is a symbol that was found on many of the archaic tablets at Jemdet Nasr. It also occurs on one of the spindle-whorls seen in Plate LXXIV, Fig. 9 (3421; Field). A similar star is present on a seal from Susa (*Mém. Dél. en Perse*, XII, Plate 105, Fig. 93). Compare also similar symbols found on predynastic pottery in Egypt (Petrie, *Diaspolis Parva*, Plate XV) and the same motive found scratched on pottery of the C group found at Faras in Nubia (*Liverpool Annals of Archaeology and Anthropology*, VIII, Nos. 3-4, Plate XIV).

Nos. 9-10 are painted in purplish black on the surface of the pottery.

No. 11 likewise shows a five-pointed star, but rather differently drawn from that in No. 8. It is painted in purplish black on the drab surface of a spouted jar, which type of vessel was very rarely decorated (Plate LXIII, Fig. 29. 3118; Oxford).

No. 12 shows a design of lozenges painted in purplish black on a fine cream slip, with a band of red on either side (dotted). The body is a light red clay containing an admixture of sand and lime (3430; Oxford).

No. 13 is a design painted in plum color on the pottery body. It is unusual on account of the hatching of the interior of the double-triangle motive and in having two vertical lines. This design was found on the spouted jar illustrated in Plate LXIII, Fig. 5 (3349; Field).

No. 14 is a simple design in black on a rough cream-colored slip. The body is light yellow in color, very friable, and contains a certain amount of dirt (3422; Field).

No. 15 is a most unusual polychrome design. The curvature of the fragment suggests that its proper position is that in which it is placed in the plate. The ware is a light red clay mixed with lime, but containing little or no sand. Instead of the usual black, a purplish red has been used in conjunction with bright red. The darker red is represented by black for the sake of clearness. The ground is a very finely polished, light pink slip (3431; Oxford).

No. 16 is also a polychrome design. The colors are black and red (dotted), and the ground which makes the third color is a fine yellow ochre. The body is light red in color and mixed with a little sand and lime (3424; Field).

No. 17 is in black and red on a ground of yellow ochre. The lozenges formed by the hatching of the central panel are unusual in that some of them are filled in with red, alternating with those that are left the color of the ground (3457; Field).

Plate LXIX, No. 1, is a group of signs roughly scratched on a spouted jar of globular shape. It is the only inscription of the kind found at Jemdet Nasr. Professor Langdon is undecided as to the significance of the first sign, but would identify the second as *lal* ("to weigh" or "weight"). The third he identifies as *sal*, meaning "women," originally "pudenda." These three signs are probably a name. They would hardly be a pot-mark as a single sign would have sufficed for that purpose.

No. 2 of the same plate represents a fragment of pottery which has been overfired with the result that its decoration which was formerly black has turned to a greenish color. It is difficult to say what the motive on the right of the fragment represents, though there is little doubt that it is meant for some kind of animal.

No. 3 is a polychrome design in black and red on a yellow ground. The animal figure on the right probably represents a gazelle.

No. 4 also is painted in black and red on a yellow ground. The animal figure is difficult to identify; it was repeated at intervals down the panel of which only the top is shown.

No. 5 is part of a design painted on a jar of light red clay with an admixture of sand and lime. Groups of triangles boldly outlined in black have their interiors either hatched in black or filled in with red. The spaces on either side of the apices of the triangles are painted a deep yellow. Above and below the band of triangles is a narrower band painted deep red (3427; Oxford).

No. 6 shows a design painted in black, yellow, and red on the surface of the pottery. A horizontal band of red surmounts a rough triangular motive, and above there is again a rough, deeply notched beading.

No. 7 is in red and black on a yellow slip. The design in this case is confined to the shoulder of the jar, the remaining portion of which is entirely covered with a red slip (Plate LXIX, Fig. 7; 2473A; Field).

No. 8 is a most unusual pattern, consisting of a single row of triangles alternately hatched with black and filled in with dark red. The design is painted on a red ground (see Plate LXV, Fig. 25. 2544; Baghdad).

No. 9, which is fragmentary, is a somewhat crudely drawn, double-triangle motive painted in red. The interiors of the two triangles are filled in with a hatching of black lines crossing red. The unpainted portions of the decoration are cream-colored. The employment of two colors for the interior hatching of a triangle or of a double triangle has been noticed on a piece of unpublished pottery dated to Susa II. I have seen the same use of the two colors on early pottery from northern Baluchistan.

No. 10 shows a very small fragment of a design, but it is included here because the hatching resembles that of No. 9. The ground on which the design is painted is colored with yellow ochre.

No. 11 again shows the double triangle design, the interiors of the triangles being filled in either with solid black or with red; in the latter case the triangles are outlined with black. The ground is yellow ochre.

No. 12 was taken from a jar which was fairly complete, and, with the exception of the shoulder, coated all over with a red slip (Plate LXVI, Fig. 39). This jar is made of a porous, light red clay that contains a great deal of sand and a little lime. The coloring of the design is black and red on a yellow ground (3068; Oxford).

No. 13 represents a sherd of light red clay with a large admixture of sand and lime. The design is painted in black and red on a yellow ground (3428; Field).

No. 14 is a decoration in red and black on a ground of deep yellow ochre. The body is light red and contains a great deal of sand, but very little lime (3432; Oxford).

No. 15 is painted in black and red on a yellow ground. No. 16 represents a fragment of light red pottery, which contains a little lime. The colors used are red and purplish black. The ground is a smooth slip with a slightly pinkish shade (3433; Oxford). No. 17 is red and black on a ground of yellow ochre. No. 18 is black and a plum-colored red on a cream slip (Oxford).

No. 19 is perhaps the finest design found at Jemdet Nasr. The fragment on which it appears is all that was left of a very fine jar with four lugs. The body is light red in color, with a heavy admixture of both sand and lime. The decoration consists of broad bands of red and yellow, upon which thick lines of purplish black were laid to hide the junctions between the two colors, as well as to emphasize certain details. The red portions of the design are a heavy, smooth, plum-colored slip, which under a glass is seen to contain minute particles of blue. The yellow is a heavy paint, a natural ochre. Both colors have been carefully burnished in the horizontal direction with some rounded instrument (3424; Field).

No. 20 represents a fragment of a jar harder baked than usual. The colors of the design are black and red upon a cream slip (3429; Field).

The design which occurs most frequently on the painted pottery from Jemdet Nasr is the triangle, either outlined in a single color, or painted in alternate colors, red and black, or with the interiors filled in with a cross-hatching. This motive is common at Musyan also, but rare at Susa. Indeed, the triangle is employed in the decoration of pottery in most parts of the ancient world.

The next most common motive is the lozenge. A design that frequently occurs is a single vertical column of lozenges painted alternately red and black and bordered by black lines (Plate LXIX, Figs. 12-14 and 16). More rarely, the lozenges are painted one color only and arranged in groups of two or three vertical borders, as in Plate LXVIII, Figs. 12 and 16.

Very rarely, as in the design in Plate LXVIII, Fig. 17, the lozenges are painted red and yellow. The lozenge motive is well known on the pottery from Al 'Ubaid (Excavations at Ur, Plates XVII-XVIII, XLIX) and at Susa, first and second periods (Mém. Dél. en Perse, XIII, Plates V-VI, XXII, XXV). In the Susa I period this motive was generally used to fill in vacant spaces, but in

Susa II it is used for vertical and horizontal borders (*op. cit.*, XIII, Plate XXV; VIII, pp. 105-106). It is also known on the painted pottery from Anau (Pumpelly, *Explorations in Turkestan*, I, Plate XXXI). At Jemdet Nasr, the use of the ornament is confined, curiously enough, to vertical bands, never horizontal ones. As a design, however, in which three colors were to be shown, it serves its purpose well, giving equal prominence to all.

A modification of the triangle design is illustrated in Plates LXVIII, Fig. 11, and LXIX, Figs. 11 and 15. This is a fairly common motive, and was used both on monochrome and polychrome pottery, though more commonly on the latter. This ornament forms a very attractive border; it also was used always in vertical, not horizontal bands. The motive was used during both periods at Susa (*Mém. Dél. en Perse*, XIII, Plates VI, Figs. 1-2 and 5; XXVII and XXIX), especially in the first and also at Musyan (*op. cit.*, VIII, p. 101, Plate VII). It is to be found, where one would expect it, in Minoan pottery. It also appears on a vase from the neighborhood of Erivan, as mentioned by Frankfort (*Studies in Early Pottery of the Near East*, R. A. I. Plate V, No. 1). On Indian pottery of the chalcolithic period it is well represented, and it is known on the prehistoric ware of Honan in China. Like the lozenge design, this motive also lends itself to equality of coloring.

Its origin is obscure, but there is an interesting human figure on one of the jars from Susa that represents a warrior wearing a garment or carrying a shield very like in the shape to this motive. It is probable, however, that in this case the ornament was adapted to the figure rather than the figure to the ornament (*Mém. Dél. en Perse*, XIII, p. 94, Fig. 212).

An interesting motive is the conventional tree shown in Plate LXIX, Fig. 16. This is not at all common at Jemdet Nasr; in fact, it only occurs on three fragments of pottery. This ornament is, however, well known and occurs in both periods at Susa (*op. cit.*, XIII, Plates V, Figs. 2 and 8; VIII, Fig. 5; VIII, pp. 114 and 129; XII, pp. 159, 161), being especially common in the second period, and also at Musyan. It is a favorite decoration at Mohenjo-Daro, and is known at Anau (Pumpelly, *op. cit.*, I, Plate 34). It is also well represented on some of the incised pottery from the "A" cemetery at Kish (see Plate XLV, Figs. 11 and 13, of this volume). That this motive is derived from a tree or other plant seems certain, and it perhaps most closely resembles a palm-branch. In each of the examples found at Jemdet Nasr this form of ornament was drawn in red. Somewhat allied to it is the decoration found on a spouted jar, illustrated in Plate LXVIII, Fig. 2. This also may possibly represent a palm-branch, but I am inclined to think that this particular motive is derived from some other form of vegetation, for the leaflets are very short in comparison with the rest of the leaf.

The ladder motive, two examples of which are illustrated in Plate LXVIII, Figs. 9-10, was fairly common in Jemdet Nasr, either single, or double, as in Plate LXVIII, Fig. 10. It seems to occur only on monochrome pottery. The design in Plate LXIX, Fig. 3, really represents a tree, not the ladder motive. (Compare with Plate XLV, Fig. 10, of this volume.) The motive is uncommon at Musyan (*Mém. Dél. en Perse*, VIII, pp. 108, 132), and does not appear to have

been used in the period of Susa I. It is frequent on the painted pottery of Mohenjo-Daro, where it is repeated with monotonous regularity.

The simple border beneath the star in Plate LXVIII, Fig. 8, is also a common feature of the decoration of the pottery of Jemdet Nasr. Another form of the border, where the oblique lines give place to vertical lines, occurs only once on the Jemdet Nasr pottery. Borders of this kind are exceedingly common on painted pottery from whatever place, and are largely used at the present day in India.

Checker patterns, illustrated in Plates LXIX, Fig. 20, LXXIX, Figs. 1, 4, and LXXX, Figs. 1, 2, are somewhat rare at Jemdet Nasr. This form of decoration must not be confused with, and is indeed quite distinct from diagonal hatching, which produces a series of lozenges. A very simple form of checker, formed by simple vertical and horizontal lines, as illustrated in Plate LXIX, Fig. 17, is quite common. Only one color was used, however, the slip on the jar providing the second. This motive is found at Musyan (*op. cit.*, VIII, pp. 102, 106, 108), but seems to occur only in the first period of the Susa pottery, where it is very common indeed (*op. cit.*, XIII, Plates XIII-XV). There can be no doubt, I think, that the checker design is derived from basket-work.

Bands of cross-hatching are an extremely common form of decoration at Jemdet Nasr. The lines are usually in black, the ground being either the natural color of the pottery or a slip covering it. As a general rule, this decoration is arranged in vertical metopes, as in Plates LXXVII, Figs. 1, 3; LXXIX, Figs. 4, 5, but it is also used in panels in horizontal friezes (Plate LXVIII, Fig. 6).

The lines forming the cross-hatching are drawn at an angle of about 45° to the vertical border lines; and this angle is practically invariable, the only exception being the hatching shown in Plate LXVIII, Fig. 14, where the lines are at right angles to the borders, forming a checker pattern rather than cross-hatching.

A very rare form of cross-hatching is found on two fragments of pottery. Lines of two colors cross one another (Plate LXIX, Figs. 9-10), but the result is not very effective, which perhaps explains why it was not more used. As would be expected of an extremely simple form of decoration, cross-hatching was very widely used as a decoration in antiquity. At Musyan there was a tendency to very careful and regular cross-hatching with the idea, apparently, of producing checkers or lozenges rather than of quickly filling up a vacant space. Cross-hatching was extensively employed on the incised vessels of the "A" cemetery at Kish, but is very rare at Mohenjo-Daro.

The simple zigzag line, as a border, which occurs so plentifully on the pottery of Susa and Musyan, is sparingly used on the Jemdet Nasr pottery, if we exclude the triangles, which would resolve themselves into this type of decoration were their hatching removed. A more complex variation of this motive is shown in the designs in Plates LXIX, Fig. 18, and LXVIII, Fig. 7, where it is horizontal, and the more simple ones in Plate LXXX, Figs. 1 and 2.

Animal designs are very rare at Jemdet Nasr (Plate LXIX, Figs. 2-4). No. 2 is difficult to interpret; it may possibly represent an antelope with a long neck and the head lost in an upper border line.

No. 3 apparently represents an antelope with its head close to the trunk of a tree. Three very similar figures, also with trees, were found incised on pieces of pottery found in the "A" cemetery and dated to about 3000 B.C., a later date than that of Jemdet Nasr.

No. 4 is obviously an animal with its head turned to look backward. What the animal actually is, it is impossible to say, but representations of animals shown as looking behind them are quite frequently seen on early seals, especially those dated to about 3000 B.C. (Note the antelopes in Plate XLI, Fig. 7, of this volume.) A different variety of antelopes is pictured on the small sherd in Plate LXXX, Fig. 4, and what would seem to be a doe with her young is represented in Fig. 1 of the same plate.

The scorpion is frequently represented on the early pottery of Egypt and Elam, and it is, therefore, not surprising to find it also on the pottery of Jemdet Nasr (Plate LXXX, Fig. 1). The lion is very well known on the early seals of Sumer and we may, perhaps, recognize the hindquarters of the animal in Fig. 4 of Plate LXXX as belonging to this beast.

Two birds are pictured in Plate LXXX, Fig. 2, together with a fish. These motives are shown separately on the pottery of Elam, whether from Susa or Musyan.

There are many motives in the designs on the Susa and Musyan pottery which are rare or entirely absent at Jemdet Nasr. For instance, the little "W" motive which is so common on the Musyan pottery has never been found at Jemdet Nasr, though careful search was made for it. Also the cross-patée decoration which is so frequent on the pottery of the first period of Susa, and which also occurs on the Musyan pottery and again in some of the pottery from Turkestan (Pumpelly, *op. cit.*, I, Plate 32), seems to be entirely absent on the Jemdet Nasr ware, unless we accept the theory that the "double triangle" design is a modification of this motive. It is true that the cross-patée has been found at Jemdet Nasr, but only as a seal-impression (Plate LXXVI, Fig. 13), showing that the motive was known, though apparently never employed in the decoration of pottery.

The snake motive also is a common feature on the Musyan pottery, in both periods at Susa, and also at Tépé Aly-Abad. This design, however, is exceedingly rare at Jemdet Nasr, only two examples being known, one of which is represented in Plate LXVIII, Fig. 1, where the figures can hardly be recognized as snakes at all and show a marked deterioration of the original design. On the other hand, the simple border in Plate LXVIII, Fig. 6, apparently does not occur on any of the pottery from Elam, whereas it has been found in almost identical form on pottery from the lower levels at Assur two examples of which are given in Frankfort's article (Studies in Early Pottery of the Near East, Plate VIII).

Putting the question of shape aside for the moment, there is no doubt, I think, that the designs on the pottery from Jemdet Nasr on the whole strongly resemble those of Elam, especially Musyan; but the infrequency of animal figures and the stiffness and formality of the designs show a marked degradation. I

would, in consequence, date the painted pottery of Jemdet Nasr later than the Musyan pottery, which itself seems to be of a later date than the pottery of the second period of Susa.

It may be argued that the wares from Musyan and Jemdet Nasr are possibly of the same date and that the difference in the decoration of the two can be accounted for by the very considerable distance separating the two places. This, of course, might well be the reason for the absence from the Jemdet Nasr ware of some of the motives on the Musyan pottery, but, on the other hand, one would expect just as free a style of decoration in the former, accompanied by motives that do not occur on the Musyan ware.

Another point of interest in the Jemdet Nasr pottery is the very decadent style of drawing shown in the animals. In fact, some are barely recognizable as animals owing to their irregularity of form. In comparison with the animals on the Musyan ware, they occupy a very subordinate position. The animals portrayed on the Musyan ware and on the pottery of the second period of Susa are on the whole well done, though they tend in some cases to become geometrical in form; but they are quite recognizable. A glance at the animal figures in Plate LXIX, Figs. 2-4, will, I think, convince most readers that we have here a much more debased form of naturalistic decoration than occurs on the later pottery of Elam.

A marked feature of the designs is their linear form. In fact, the majority of them could have been prepared with a straight edge, but for the fact that their pleasing irregularity proves them all to have been drawn free-hand. These linear designs, though decorative, are nevertheless somewhat uninteresting and compare unfavorably with the freer work of Elam. On this account alone, the Jemdet Nasr pottery must be placed at a later date than the Musyan ware.

A fact also to be considered is that, as a rule, only the shoulder of the jar is decorated, the remaining portion being left the natural color of the pottery or coated with a slip, which was frequently red. This, again, is at variance with the Susa and Musyan pottery, whose decoration is but rarely confined strictly to the shoulder of a jar. Only a very few pieces of the Jemdet Nasr pottery have the body likewise decorated, as, for instance, the jar shown in Plate LXV, Fig. 34, which has a somewhat similar design to that pictured in Plate LXIX, Fig. 18. In a jar of this type, which has a very indefinite shoulder, it was naturally not so easy to confine the decoration to the shoulder only.

The curious arrangement of the decoration on the painted jars from Jemdet Nasr in solid panels of color separated by panels containing varied designs seems to have been in vogue as early as the first period of Susa (*Mém. Dél. en Perse*, XIII, Plates XXI-XXII), but, curiously enough, it is comparatively rare in the second period and at Musyan; though, as pointed out before, the lugs and the general shape of the Jemdet Nasr pottery approach more closely to the later than to the early pottery of Susa. The decoration on the Susian or Musyan wares was more or less frieze-like and continuous. Examples of the latter type of decoration are, of course, also found at Jemdet Nasr, but it is much less common than the

vertical panels. Such an arrangement suggests a derivation from pottery that was carried in a basket-work cover to protect it, the body of the jar being completely encased and the shoulder and neck protected at intervals by vertical strips only. This arrangement of the design in panels is an almost invariable feature of the polychrome pottery. The simple frieze, or horizontal border, is usually painted in monochrome. It must be admitted, however, that there are designs which it is difficult to trace back to basket-work, though this is suggested by their general arrangement.

From the fragments received a number of jars with painted designs have been partially or completely restored by T. Ito in Field Museum. These are illustrated in Plates LXXVII-LXXX. The technical description of these pieces has been prepared by D. W. Phillips.

Fig. 1 of Plate LXXVII represents a squat pot, 21.10 cm high, with a diameter of 9.20 cm at the base. It swells from a narrow base to a well-defined shoulder at about half its height and curves in from the shoulder to a wide open mouth. The neck is well defined, but short, and has a sharply outward sloping rim. These three elements are treated separately in decoration: the lower half of the pot swelling to the shoulder is in undecorated bright red; the upper half above the shoulder is decorated, within 2 cm of the neck, with black ferruginous paint on the buff ground of the pot. The decoration is carried out in a kind of elongated triangle with the apex cut off. In twelve such spaces, two filled with cross-hatching are followed by one with three or four lines drawn parallel with one side of the headless triangle, this by two with cross-hatching, and so on. The spaces between these headless triangles are painted with the red paint of the base. The upper and lower limits of this area of decoration are defined by black lines running around the body of the pot—one at the shoulder and the other at 1–2 cm from the neck. The neck and rim are painted in the red, which is carried inside the pot to the bottom of the neck.

The pot was fired at a fairly high temperature; it is roughly 1 cm thick, but is thinned at the shoulder and, with graceful skill, at the rim.

Fig. 2 of the same plate illustrates a squat jar with four lugs, well baked and suggesting the existence of an original cover. It is painted with a dark red pigment inclined to purple, which is badly damaged, but appears to have had a luster.

Fig. 3 of this plate represents a larger heavy stone jar, 25.90 cm high (diameter of base 5.70 cm), swelling from base to its greatest width at about half its height, then recurving gently back to its neck. At the greatest width is a scarcely perceptible shoulder. There are four knobs at the base of the neck which are clearly decayed lugs. The base of the pot is well made and slightly hollowed. The mouth is narrow in relation to the body, and the slope of the rim is gently away from the neck. The decoration (which is confined to the upper half of the pot, the neck, rim and lower half being painted in bright red) is badly damaged, but shows longitudinal bands defined by black lines and filled with hatching and diamonds so as to leave the buff ground visible. The interspaces are filled in with red. The

fabric shows a tendency to flake, but is well made, about 1.20 cm thick, and was fired at a moderately high temperature.

Fig. 4 of this plate is an elongated, pear-shaped vase, 20 cm high (diameter of base 3.20 cm), swelling to greatest width high up the body and curving in to a high neck (3.50 cm) with outward sloping rim. The light-colored clay has been toned with a pink wash. The clay is well baked and durable; it is 0.80 cm thick. The base is too small in area and too uneven to support the vase.

Fig. 1 of Plate LXXVIII is a squat ovoid pot, 20.80 cm high (diameter of base 10 cm), decorated with light red paint and two bands of chevrons, which are separated and outlined by a dark brown paint. The red paint is carried down inside the neck. The clay is well baked. The chevrons are filled with a red paint, a plain white paint, and a dark brown cross-hatching on a painted white ground.

Fig. 2 of this plate is a globular pot, 19 cm high, with a wide base (9 cm in diameter), narrow neck, and a spout high up on the shoulder. The greatest width is well below the middle of the pot; there is a slight shoulder below the neck, the existence of which is brought out in the decoration. The neck is very narrow, but opens in trumpet-mouth fashion. The clay is well fired, durable, thickened at the base, and is from 0.80 to 1.20 cm thick. The pot is decorated in reddish purple paint on a buff ground. The decoration is confined to two fields: (1) the body of the pot from the shoulder to within 5.50 cm of the base; (2) the space (which is somewhat flattened) between the shoulder and the base of the neck. The decoration consists of straight and wavy lines, cross-hatching in chevrons, alternate squares of paint and the free-ground buff. It is applied with an intelligent appreciation of the shape of the pot.

Fig. 3 of this plate is a distinctly square jar, 18.90 cm high (diameter of base 14.30 cm), rather like a kettle, possibly only for storing. It has a high, almost rectangular body, a flattened top with a thick rim, no neck, and four pierced lugs which seem too small to have any function, in view of the weight of the jar. The clay, about 0.70 cm thick, is well fired and durable; it is painted with a not very permanent, dark red wash. The top strongly suggests the original existence of a cover.

Fig. 4 of this plate illustrates a tall jar (32.20 cm high, diameter of base 4.40 cm) with very narrow trumpet-mouthed neck and a spout. It is of rather coarse light buff ware made up in three sections: (1) the conical base to about halfway up the pot; (2) the swelling upper half of the body; (3) the neck. The spout is on the line of the junction of (2) and (3). Three lines are drawn around the top of the body with a dark purple paint.

In Fig. 1 of Plate LXXIX is shown a sherd of a large pot (about 36.80 cm at its greatest width), which swelled from the base to a well-defined shoulder (cf. Plate LXXVII, Fig. 1) at about half its height. It curved from this shoulder to the mouth. The sherd comes from that portion above the shoulder which was the only portion decorated, the lower part being, originally, merely painted with a dark red paint. The pinkish clay was well baked and covered with a cream slip. The decoration consists of pairs of elongated cream triangles drawn with dull

black paint and separated by thick bars filled with the black paint so as to leave cream rectangles visible. Four thin black lines are drawn in the triangles. The rest of the sherd is painted with the dark red paint which must have had a distinct sheen. There are two lugs on the sherd which are not pierced and seem to have no practical use.

Fig. 2 of this plate is a well made little vase, 5.70 cm high, perhaps for ointment or perfume. It is of pinkish clay covered with a cream slip. The body of the vase is decorated with dark red and black pigments so as to leave the cream slip visible in places. At the base of the neck is a thick line of black paint; the neck itself has only the cream slip for decoration, while the sharp-angled rim and the inside of the trumpet-like mouth are light red. The cross-hatching which can be seen in the photograph is in black paint.

Fig. 3 of this plate is a well baked jar, 9.70 cm high, of pink clay with a cream slip. At the base of the neck is a zigzag ornament in what was once purple red paint. The inside of the neck and the rim seem to have been originally painted with the same purple red color. The base of the jar is square, and over each side of the square a red triangle is painted. At its greatest width the jar is round. All the colors have been affected by fire. (Compare with Plate LXV, Fig. 17.)

Fig. 4 of this plate represents a fragmentary jar (30.50 cm high) with knobs on the shoulders and geometric decorations in purplish paint.

Fig. 5 of this plate shows a pot, 10.80 cm high, of a well baked, buff-colored clay. It has a slightly raised base. From this base the body rises at an angle to its greatest width and, making an obtuse angle at that point, it rises again to yet another angle on the line of the four pierced lugs. The decoration is applied, with an eye to the shape of the vessel, in a light red paint on the buff clay. Two lines are drawn around the body: one to include the lugs; the other at the greatest width. Within these lines and between each pair of lugs is a rectangular field filled with cross-hatching. On each side of this field are two thick bars and three to six thin lines. The painting itself shows but little real care.

Fig. 6 of this plate is a curious little vase, 7 cm high, made of pinkish clay which tends to flake. The base is well defined, and the vase stands well on it, rather like two cones with their bases placed together. The whole body was painted with a purple red paint which must have had a slight luster. The neck is badly damaged but was probably trumpet-mouthed.

Fig. 1 of Plate LXXX illustrates the restored fragments of a well made jar. The decoration is applied with black lusterless paint on the buff ground; occasionally a red line (distinctly lighter in the photograph) is added to the lines defining the rectangular fields of decoration. It is a conventionalized naturalistic style. Attention should be drawn to the cross-hatching on the body of the kid suckling its young. In two fields there is a conventionalized animal which may be a sea monster.

The fragment in Fig. 2 of this plate exhibits on the right and left a bird with a fish in its beak. Its body is filled with a hatching. Of special interest are two eyes separated by a bar of black and free buff squares.

Fig. 3 of this plate is a sherd (15 x 9 cm) of rather coarse, dirty-gray clay. It is 1 cm thick and very well baked. The decoration—somewhat slackly carried out—consists of diamonds in a black lusterless paint.

Fig. 4 of this plate is a sherd (9 x 9 cm) of a well made pot originally decorated in bands. The decoration is painted with a thin brownish black lusterless paint on the clay ground (light buff). There is a stag with antlers looking backward. The other animal is probably a lion.

III. TOOLS AND IMPLEMENTS

The copper objects found at Jemdet Nasr were unfortunately very badly preserved owing to the damp and salty nature of the soil. They were mostly found in irregular masses of oxide with but little trace of the original metal left.

ADZE Plates LXXI, Fig. 32; LXXV, Fig. 6

The copper adze shown in Plates LXXI, Fig. 32, and LXXV, Fig. 6, is, however, in a surprisingly good state of preservation. It resembles some of the adze-shaped battle axes found in the "A" cemetery at Kish (Plate XXXIX, Fig. 9, this volume) and is 21.40 cm long and 5.55 cm wide at the cutting edge, which is sloped both sides. Its thickness including incrustation is 8.50 mm. Similar blades have been found associated with painted pottery at Susa (*Mém. Dél. en Perse*, XIII, p. 11, Fig. 27) and also at Musyan, but they were somewhat shorter in form (3136; Oxford).

SPATULA Plate LXXI, Fig. 30

No. 30 in Plate LXXI is a round piece of copper rod, 9.50 cm long, that is flattened at one end. It was probably used as a spatula to extract a cosmetic from a jar (3344; Baghdad).

FISH-HOOKS Plate LXXV, Fig. 4

Two fish-hooks are illustrated in Plate LXXV, Fig. 4. The larger one is made from a rod of copper 6 mm thick, but it is so corroded that it cannot be determined whether it was hammered or cast. It is 7.10 cm long (2482; Field).

The smaller hook is 6 cm long and 5 mm in diameter. It has a single barb, and the shank is slightly flattened at the end to prevent the line from slipping (2481; Oxford).

STONE IMPLEMENTS Plate LXXV, Figs. 9-10

Two stone implements, shown in Plate LXXV, Figs. 9-10, were the only two of their kind found at Jemdet Nasr. No. 9, measuring 7.80 x 6.90 x 1.90 cm, is a piece of gray chert, lenticular in shape. It was probably used as a scraper (2428; Field).

No. 10, of the same material, is 1.50 cm long. It is roughly made and shows slight traces of polish at its broader end. This object was probably used as a hoe, and its counterpart has been found at Abu Shahrein and Ur in southern Babylonia (*Archaeologia*, LXX, Plate VIIB; Excavations at Ur [Al 'Ubaid], I, Plate XIII), also at Susa (2427; Baghdad). Dr. Campbell-Thompson found a number of similar hoes lying on the surface of the ground at Abu Shahrein (*Archaeologia*, LXX, Plate VII [B]).

HONES Plates LXX, Figs. 15-17; LXXI, Fig. 28

No. 28 in Plate LXXI (see also Plate LXXV, Fig. 6) is of sandstone and 18.90 cm long. Down one side it has been worn to a blunt edge. The wider edge is

beveled. Though the usual hole for suspension is absent, there is reason to think that this implement is a hone (3135; Baghdad).

Several hones are better made and shaped. No. 15 in Plate LXX, 7 cm long, is made of sandstone. It is very similar in design to some found in the "A" cemetery at Kish (3105; Oxford).

No. 16, also of sandstone, is 8.40 cm long by 2.65 cm wide. It has a hole for suspension, which is deeply beveled on both sides of the stone—a very unusual feature, showing that the maker found great difficulty in piercing it (3098; Field).

No. 17 is of sandstone and 1.29 cm long. It is unusual in shape, with a projection at the top which has been pierced by a small hole. It is a good example of its kind (3300; Field).

CELTS Plates LXX, Figs. 23–24; LXXIV, Fig. 1

The two polished stone celts illustrated in Plate LXX, Figs. 23–24, and Plate LXXIV, Fig. 1, are the only two of these objects found. The first is 5.30 cm long and irregular in shape; it is made of a very hard gray stone (3370; Field).

No. 24 is better shaped, though somewhat roughly made. It is a hard stone, measuring 6.40 x 3.50 x 1.50 cm, that is olive green in color. Owing to its very blunt edge, which is 5 mm in thickness, this implement would have been of little use as a tool, but it probably made a very efficient battle axe (3401; Baghdad). Similar celts have been found in the "A" mound at Kish. Plate XXXVIII, Fig. 8, of this volume.

AXES Plate LXXV, Figs. 7–8

The interesting battle axe made of pottery, illustrated in Plate LXXV, Fig. 7, is the only one of its kind to be found. Despite the material of which it is made, it could have been a very serviceable weapon, as it is very hard baked. It is provided with a socket for a handle (3029; Baghdad). We are accustomed to socketed weapons in Mesopotamia, dated about 3000 B.C., but this pottery model shows that they can be carried back much farther. Very similar axes in pottery have been found at Al 'Ubaid (Excavations at Ur, I, Plate XLVI, 2).

Implements of the type shown in Plates LXXV, Fig. 8, and LXXI, Fig. 29, which are of pottery, have also been found at Susa, but made in copper (*Mém. Dél. en Perse*, XIII, p. 11, Fig. 29). The specimens from Jemdet Nasr are evidently models of the real article, fashioned perhaps for burial with the dead. The first is now 12.20 cm long, as part of its handle is broken off (3050; Field). The second, which also has a portion missing, is 11.40 cm long (3051; Baghdad). The third is perfect, and is 12.80 cm long (3014; Oxford). The three implements are made of a fine compact, straw-colored clay, hand-modeled and with smooth surfaces. In each, the broad end terminates in as fine an edge as is possible in pottery. I regard these as model axes.

SICKLES Plate LXXVI, Fig. 11

The two sickles illustrated in Plate LXXVI, Fig. 11, were also found at Jemdet Nasr. Both sides of the tool are illustrated. In the "A" cemetery at

Kish were found pieces of flint of rectangular shape with two fine-notched edges which were used in making pottery sickles. They were fastened to the pottery holder in a row with bitumen. Some of this material still firmly adheres to the flints in many cases. Pottery sickles of this description are a common feature of very early sites in Babylonia. The fact that they come down from very early times is proved by specimens being also found at Jemdet Nasr. Though these sickles were baked very hard, they were very liable to breakage owing to their brittleness, which accounts for the great number of broken specimens that have been found. The flint teeth were evidently of much more value than the holder, with the result that when the latter broke, the teeth were removed and re-used in a new holder (3104; Baghdad. 3369; Field).

SPINDLE-WHORLS Plate LXXIV, Fig. 9

Spindle-whorls were found in considerable numbers at Jemdet Nasr, showing that spinning and weaving were well known at the period. The majority of the whorls are uninteresting, being made of baked clay and unornamented. A few, however, are decorated (Plate LXXIV, Fig. 9).

Taking the whorls in order from the top, we first have one decorated with simple radial lines. It is made of baked clay, and is 4.30 cm in diameter and 1.40 cm thick (3078; Baghdad). The second in the upper row is also of baked clay; its upper surface is decorated with linked radial lines. It is 4.60 cm in diameter, and is 1.50 cm thick with a slightly concave base (3079; Field).

The third is made of steatite, and originally measured 5.50 cm across and 1.80 cm in thickness; but, unfortunately, half this whorl is missing (3082; Baghdad). The largest whorl is made of bituminous limestone; whether natural or artificial, it is impossible to say. Its dimensions are 9.40 cm across and 2.10 cm in thickness. The pattern is a rosette with a zigzag line around it (3081; Baghdad).

The middle whorl is of pottery and decorated with looped radial lines. This measures 3.70 x 1.20 cm (3083; Baghdad). The one to the right of it is 3.65 cm in diameter and 1.10 cm thick; it is made of limestone with a deep groove round its upper surface which was probably once inlaid with bitumen (3080; Oxford). The middle whorl at the bottom of Fig. 9 is interesting for the five-pointed star that is incised upon its surface (compare the stars painted on the pottery fragments in Plate LXVIII, Figs. 8 and 11). It measures 4.60 cm in diameter, and is 1.20 cm thick. It is made of baked clay, but is badly chipped at the edge (3085; Oxford).

The last whorl measures 4.80 cm by 1.50 cm, and is also of baked clay; its upper edge is decorated with radial scratches (3084; Baghdad).

The rosette that is incised on the large whorl is interesting, because it is the oldest known example of this motive that has yet been found in Mesopotamia. I exclude the examples found on game-boards from the early royal tombs of Ur, as the date of these tombs has not yet been finally settled. The use of the rosette extended over a very long period in Mesopotamia and certainly down to Persian times. It will be noticed that the makers of some of these whorls found it difficult to draw a rounded end to the petals of the rosette and used straight lines instead.

NEEDLES AND BODKINS Plate LXXI, Figs. 1-7

Needles and bodkins (Plate LXXI, Figs. 1-7) are in some cases difficult to distinguish from the hair-pins shown in the same plate. The holes through the heads suggest that they were used for sewing rough materials, such as tent-cloth and leather. They are all made of bone, and two (Plate LXXI, Figs. 3-4) are very roughly fashioned. Figs. 5-7 on the same plate are better shaped, with pointed heads which may have been used to enlarge a hole or to mark the material being worked.

Fig. 1. Broken. Now 7.70 cm long. Round in section with a slightly flattened head with eye (3333; Field).

Fig. 2. Broken. Now 5.70 cm long. Oval in section (3334; Oxford).

Fig. 3. Perfect. 11.80 cm long, 0.80 mm in diameter. Round in section (3402; Baghdad).

Fig. 4. Broken in two pieces and repaired. 9.40 cm long, 7 mm in diameter. Round in section (3403; Field).

Fig. 5. Broken. Now 5.80 cm long, 10.50 mm in diameter at the head. Round in section (3090; Baghdad).

Fig. 6. Broken and repaired. 12.40 cm long, 9 mm in diameter at the head. Round in section (3327; Baghdad).

Fig. 7. Broken. Now 8.20 cm long, 10 mm in diameter at its widest part. Round in section (3340; Baghdad).

MACE-HEADS Plate LXX, Figs. 7-8

What appear to be mace-heads are shown in Plate LXX, Figs. 7-8. Both are made of baked clay. The first is 9.70 cm high and 11.10 cm in diameter (3464; Field). The second is 7.50 cm high and 11.40 cm in diameter (3463; Field). They were probably lashed to a stick and then coated with bitumen, and must have looked very much like the weapon which is still used by the Arabs of Mesopotamia.

Fig. 9 in the same plate is difficult to understand unless it be an unfinished mace-head. It has the shape of a mace-head, but though there are deep holes at the top and bottom, they were never made to meet. This object is of gray tufa, is rather weathered, and appears to have been shaped by means of a stone hammer. It is 6.40 cm high and 6 cm in diameter (3378; Oxford).

BRICKS Plate LXX, Fig. 25

Fig. 25 in Plate LXX illustrates the type of brick found in the walls of Jemdet Nasr. Two sizes were found: 20 x 8.50 x 8 cm and 23 x 9 x 6.50 cm, the first always unbaked, but the second both baked and unbaked. The baked bricks, which were sometimes used for thin walling as well as for paving, always have three oblique holes made with a stick when the brick was wet, and average 1 cm in diameter. The purpose of these holes is difficult to explain. They may have been intended to assist in drying the brick, but their regularity—they are

always in a line in the center of the brick—militates against this theory. Nor would such regularity be necessary, if the holes were required for frogging. None of the unburnt bricks was perforated in this way, and we are, therefore, led to the conclusion that the holes were thought to help in some way in the baking of the bricks (2987; Field).

GUTTERS Plate LXXVI, Fig. 9

The objects shown in Plate LXXVI, Fig. 9, are two of the gutters that carried off the water from the roof of the building at Jemdet Nasr. They are well made of baked clay, and seem to be the first articles of the kind found in the archaic period of Babylonia. The one on the left is 37 cm long, 9 cm wide, and 4.70 cm deep on the outside; it is well made, of a light yellow clay plentifully mixed with sand. The sides of the gutter gradually fine down toward the end of the spout (3442; Field). The other is 31 cm long, 11.50 cm wide, and 6.50 cm deep on the outside, but the portion that was fixed in the wall is missing. In this specimen, too, the sides decrease in height toward the end. The clay of which it is made is greenish in color and imperfectly baked (3443; Oxford). These two gutter-spouts prove that at this very early period large buildings, at all events, were provided with more adequate means of carrying off rain water from the roof than was the large Sumerian palace of a later date excavated at Kish.

STONE OBJECTS OF UNCERTAIN USE Plate LXXV, Fig. 5

Stone objects of the kind shown in Plate LXXV, Fig. 5, were found at Jemdet Nasr in fairly large quantities. Their exact use has not yet been determined. It was at first thought that they were net-sinkers; but as stone is so rare in Babylonia, it is hardly likely that it was used for this purpose owing to risk of loss. Again, these objects resemble one another very closely in form and especially in size. The deep grooves which are carried down the sides as well as crossing one another at the tops of these stones strongly suggest that they were lashed to something, possibly to the ends of long cords to form a kind of bolas, which was thrown at an animal to entangle its legs.

These objects are mostly made of limestone, and average 6.30 cm in height, 7.80 cm in diameter at their widest part and 5.50 cm in diameter at the base, which is always flat (3397; Field. 3398; Baghdad). Exactly similar stones have been found at Susa, where they seem to have been unearthed in considerable numbers (*Mém. Dél. en Perse*, I, p. 80, Fig. 108; p. 84, Fig. 117).

PLUMB-BOBS OR LOOM WEIGHTS Plate LXX, Figs. 19-20

No. 19, 5.20 cm long, is somewhat roughly made of baked clay; it is irregular in shape (3458; Field). No. 20 is 4.90 cm long. Its surface is of bitumen, but it is possible that the object has an inner core of some other material (3459; Field).

SLING-STONES Plate LXX, Figs. 21, 26-27

Sling-stones are illustrated in Plate LXX, Figs. 21, 26-27. No. 21 is 4 cm long. Nos. 26 and 27 each average about 4.90 cm in length. Each is egg-shaped and slightly pointed at one end, and all are made of unbaked clay (3122; Baghdad).

3461; Oxford). The use of sling-stones of this description appears to have extended over a long period of time in Mesopotamia; the sling seems to have been a favorite weapon both in war and in the chase. Similar sling-stones both in stone and clay were found at Abu Shahrein (*Archaeologia*, LXX, Plate VIII).

REEL Plate LXX, Fig. 30

The reel-like object in Plate LXX, Fig. 30, is made of baked clay. It is 5.35 cm long and 3.80 cm in diameter at its widest part. It was possibly used for winding fine thread (3305; Oxford).

OBJECTS OF UNKNOWN USE Plate LXX, Figs. 1-2, 4-6

Figs. 1-2, 4-6 in Plate LXX illustrate a group of objects whose use has not yet been determined. With the exception of Figs. 1-2, they are made of pottery, well fashioned, and all appear to have been in common use.

No. 1 may possibly have been a jar stand. It is 4.60 cm high and 10.10 cm in diameter. The material is basalt, and the central hole, which is 4.40 cm in diameter, shows signs of wear and even a little polish. The base is flat, and its inner and outer edges are sharply right-angled, whereas the upper portion of the object is carefully rounded both inside and out (3414b; Field).

No. 2 is made of a semi-hard stone, being 5 cm in diameter and 1 cm thick. The small hole in the center of the disk is 8 mm in diameter, and the upper and lower surfaces are slightly convex. This object may have been used as a spinning-whorl, but the hole in its center seems too large for this purpose. It would, however, be very efficient as a light mace-head (3412; Baghdad).

No. 4 is 17.20 cm long, including the projection whose end appears to have been broken off. Both ring and projection have a flat base showing no signs of rubbing and a rounded top. The hole in the center of the circular portion is 6 cm in diameter and slightly worn (3438; Field). What may be a similar object was found by Dr. Campbell-Thompson at Abu Shahrein (*Archaeologia*, LXX, Plate X [B]).

No. 5, which is 8.40 cm. high, is composed of a light yellow ware, now in a very soft condition. In appearance it resembles a wheel with a well-pronounced hub on either side, but it is doubtful if it could ever have been used for this purpose, especially as its hole is conical. The circumference of this object has been damaged all round (3379; Baghdad).

No. 6, which is 14.80 cm in diameter, is another wheel-like object, whose conical hole suggests that it is scarcely likely ever to have revolved on anything. It may perhaps have been used as a mace-head, though the material of which it is made would hardly stand much knocking about (3380; Baghdad).

IV. PERSONAL ORNAMENTS

In view of the fact that the site at Jemdet Nasr was never used as a cemetery few personal ornaments were found; for, when the buildings were burnt and deserted, their ornaments were either taken away by the inhabitants or removed in the looting that must have taken place. We were fortunate, however, in recovering a sufficient number of objects which give us an insight into what was worn at the period to which the site belongs. As most of those illustrated were found in well built rooms, they probably did not belong to the very poor. They were more likely lost or discarded on account of their broken condition than considered of insufficient value to take away.

HAIR-PINS Plate LXXI, Figs. 8-12

These very interesting hair-pins are all made of bone. They are hand-cut; their irregularity shows that they were not made on a lathe. The majority are broken at the point, and they were very likely thrown aside for this reason.

It has been suggested that some of the articles in Plate LXXI (Figs. 1-4) are not hair-pins but needles, on account of their perforated heads. This may be so, but, on the other hand, objects that are undoubtedly hair-pins and yet were holed were found in numbers in the "A" cemetery at Kish. That Nos. 10-12 were used for the hair, there can, I think, be no question; they are of too ornamental a character to have been used for any other purpose.

It will be noticed that all the pins are short; they differ in this respect from those of later date found at Kish, which are very long. No. 10 is surmounted by what appears to be a bird's head, and in this respect resembles some of the predynastic hair-pins of Egypt. The head of No. 11 is ornamented with spiral grooves, which form of decoration is carried further in No. 12. In this latter pin, the grooves are well cut and doubtless helped to keep the pin in place in the hair.

All the pins show evidence of much use, and are highly polished. The bone of which they are made has withstood the damp and salt of the ground in which they were found surprisingly well. In fact, they are in a better state of preservation than any other objects from Jemdet Nasr, with the exception of those that are made of stone.

No. 8 has a plain rounded head with a line round it, and now measures 6 cm in length and 8 mm in diameter at the head (3089; Oxford).

No. 9 is 9.95 cm long and 1 cm in diameter. It is practically perfect (3088; Field).

No. 10 is oval in section, and now measures 4 cm in length. The lower portion of the pin is missing (3093; Oxford).

No. 11 is nearly complete and measures 5.60 cm in length. It is round in section (3092; Field).

No. 12. This pin is 9 cm long and 12.50 mm in diameter at the head. It is well made, and the spiral grooving is entirely cut by hand (3368; Baghdad).

Pieces of copper were also unearthed which might possibly be the remains of hair-pins. Unfortunately, a worse site could not have been found for the preservation of this metal, and we are quite unable to state with any degree of certainty that the inhabitants of Jemdet Nasr used copper pins for the hair. On the other hand, what may well be the head of a copper pin is illustrated in the lower right hand corner of Plate LXXV, Fig. 2. This object is spherical in shape with slightly flattened poles both of which are roughly inlaid with pieces of shell. It is 1.70 cm in diameter and made of slate. The fineness of the hole drilled through it proves that it was once affixed to a metal pin, and its form certainly suggests a pin-head (3376; Oxford).

BEADS Plates LXXII, Figs. 1-15; LXXV, Fig. 2

The comparatively few beads found at Jemdet Nasr had probably been accidentally lost. Only one complete string was found (Plate LXXV, Fig. 2, top row. 3133; Oxford).

On the whole, these few beads are roughly made and of little interest. Few of them attain the excellence of finish that is characteristic of the beads of later periods, probably owing to the scarcity of suitable stone in Mesopotamia precluding an extended manufacture. At this period beads, or the stones of which they were made, were not imported, as in later days. On the other hand, the dearth of materials for bead-making would have made necklaces much valued. On this account, they would either have been carried away on the persons of the people who occupied the site or else removed as loot. It should also be remembered that there were no burials—a fruitful source of beads—at the site.

The beads that were found are of the following materials: glaze, shell (rare), pink limestone, agate (rare), green felspar, alabaster, bituminous limestone, unbaked clay, brown limestone, crystal and bone. Of these the materials most commonly used were limestone, glaze, and alabaster.

Hard stones, with the exception of felspar and rock-crystal (the latter was commonly found in the shape of pebbles on the site of Jemdet Nasr), are conspicuously absent from the list of materials used. They either could not be procured or, what is more likely, no one was competent to manufacture beads from them. A very curious feature is the rarity of carnelian, a stone which may be said to have been the most favored material for beads from just before 3,000 B.C. down to comparatively modern times.

Another remarkable omission is lapis lazuli. Not a single fragment of this stone was found at Jemdet Nasr, though it is one of the materials most commonly used for beads in the "A" burials at Kish. Although former connections with Elam are proved by the resemblance of the pottery found at Jemdet Nasr to the wares of Susa and Musyan, yet lapis lazuli, which occurs abundantly in Elam, appears to have been unknown in Babylonia—at all events in the north—at that period.

With the exception of the green felspar, there must have been a striking lack of color in the stone beads worn at Jemdet Nasr, a dullness relieved, however, by the use of glaze. But this latter material, as far as we have been able to ascertain up to the present, does not seem to have been in very common use. The color seems originally to have been blue, but is now white.

The cutting even of the soft stone beads was very primitive. Their surfaces show a considerable amount of accidental faceting, and no attempt was made to attain special finish. The boring, however, was quite passable, showing that the drill was known and employed to good purpose.

A curious discovery made by Professor Langdon is a number of stone beads of a dark green color, which have been split in half longitudinally. They were found mixed with a few roughly made, disk-shaped carnelian beads which were all unbroken. The broken beads were barrel-shaped, and had all been successfully drilled, so that the drill appears not to have been the cause of breakage. They can hardly have been broken up by salt. It may be that they were placed on the lathe for a final polish and split in the process. The interior of the hole was in each case highly polished, showing that a very fine abrasive must have been employed.

Two unfinished beads were found. Though they were shaped and one even partly smoothed down, the holes had not been bored through them. In both the base is flat and the upper surface rounded. Longitudinally they are barrel-shaped. The same shape of bead, flat one side and rounded the other, is common at Mohenjo-Daro. It seems that the boring of the hole followed rather than preceded the shaping of the bead (Plate LXXV, Fig. 2).

It will be seen in the illustrations that the majority of the beads from Jemdet Nasr are ungainly in form. In fact, many of them look as if stones had been carefully selected as near the required shape as possible so as to minimize the amount of work necessary. Beads which were flatter on one side than the other so as to lie close to the neck seem to have been fashionable. Both this shape and a form of bead with both sides flattened were carried out in glaze, as also were barrel-shaped beads. The manufacture of beads from bituminous limestone, a material which occurs naturally and can also be produced artificially, was simple; for it is a soft stone and can easily be cut with a knife.

Shells were rarely bored for necklaces, and we found only one specimen (Plate LXXV, Fig. 2). It was a white shell dappled with dark red, and its apex had been cut off, and a hole bored through (3375; Baghdad). The glazed bead shown in Plate LXXII, Fig. 6, is a rough imitation of a shell carried out in a very unsuitable material (3372; Oxford).

That the people of Jemdet Nasr wore more than one string of beads is proved by the finding of a separator (Plate LXXII, Fig. 14). It is made of a wood resembling ebony, and measures 4.50 cm in length, 1.10 cm in width, and 4.50 mm in thickness. It is pierced with ten small holes to take the threads of the strings of beads (3332; Baghdad).

PENDANTS AND AMULETS Plates LXXII, LXXIV

Pendants, which were either simple ornaments or amulets, seem to have been worn very frequently on strings of beads. The simplest of these found are shown in Plate LXXIV, Fig. 6. The second is made of bone, and the eighth of crystal (3309 and 3097; Baghdad).

Small natural pebbles were very often perforated to take a thread: for instance, the ninth in the group (3310) (see also Plate LXXII, Fig. 23. 3102; Baghdad).

Three of the group of four pendants shown in Plate LXXII, Figs. 16-19, are made of shell, a material which was rare at Jemdet Nasr (3311; Baghdad. 3331; Baghdad. 3355; Field). Each is provided with a small hole at the apex. Two of these curious amulets are also shown in Plate LXXIV, Fig. 6. No. 18 is glazed (3312; Field).

Figs. 20 and 21 in Plate LXXII are cylinder seals, which are fully discussed elsewhere. They are mentioned here, however, as they appear to have been worn on a necklace.

We were fortunate in obtaining a number of pendants which from their form were evidently definitely worn as amulets. The most curious of these are Figs. 27-29 in Plate LXXII, two of which also appear in Plate LXXIV, Fig. 6. The two smallest of these amulets are made of glazed paste, and the largest of a thin piece of mother-of-pearl with a natural curvature. Each of Figs. 28 and 29 is perforated vertically with a fine hole for suspension, or for the purpose of tying it down to a garment. Owing to its thinness, Fig. 27 could not be treated in this way, and a hole was bored through it instead (3358; Field). What these three amulets are intended to represent, it is difficult to say. They show a remarkable similarity to the inlaid heads of some of the twelfth dynasty daggers from Egypt, but it is not suggested that they were, or even could have been, used for this purpose at Jemdet Nasr. Both Figs. 28 and 29 are flat on one side and slightly rounded on the other; they average 8.50 mm in thickness (3006a; Field. 3006b; Baghdad).

The first object in Fig. 6, Plate LXXIV, may be a phallic symbol worn as an amulet. It is 2.25 cm long, and is made of aragonite (3313; Field). A very similar object has been found by Woolley at Ur.

The interesting female figure in Plate LXXIV, Fig. 6, the back of which is shown in Fig. 5, is undoubtedly an amulet. It is cut from a soft white stone, and is represented as nude, with the exception of a fillet worn round the head. Some of the hair is gathered in to a knot at the back, and a portion hangs down in what would appear to be plaits. A small hole for suspension is drilled through the figure at the nape of the neck (3315; Oxford).

What is undoubtedly a pig, shown in Plate LXXIV, Fig. 5, is cut from a piece of sandstone, and is slightly rounded on both sides. The very large hollow eye, which is quite unlike that of a pig, was doubtless once inlaid with another material. Unfortunately, the hindquarters of the animal are missing (3343;

Oxford). The pig seems to have been a favorite animal at that period; for, besides figuring as an amulet, it is represented in other connections (Plate LXXVI, Fig. 2). It was probably hunted for food. Indeed, the animal is still common in the marshes of Mesopotamia. In the filling of E-temen-ni-il, of the period of Ur-Nammu, an almost complete painted figurine of a pig was found, along with pieces of painted pottery of the Al 'Ubaid I type (*Antiquaries Journal*, 1925, p. 355).

In the middle of the group of amulets shown in Plate LXXIV, Fig. 6, there is what appears to be the figure of a bear made in slate and seated in a characteristic attitude. This figure is slightly rounded on both sides, but it seems to be unfinished as there is no hole for a cord through it (3304; Baghdad).

In the bottom row of Plate LXXIV, Fig. 6, is a representation of a bearded man with an animal's body, lying with his legs curled up beneath him. A suspension hole runs vertically through the body. This object is made of serpentine, and there appears to be a much effaced linear inscription on the back, which does not agree in style with the writing found on the tablets from Jemdet Nasr. It is possible that this figure is of considerably later date and was dropped on the site. The amulet is 4.20 cm long, 2.50 cm high, and 9.50 mm thick (3308; Baghdad).

The object in the lower right-hand corner of Plate LXXIV, Fig. 6, is also shown in line as Fig. 15 in Plate LXXII. It is made of bone with a hole for suspension and represents a bird with a broad flat tail (3314; Baghdad).

Another amulet found at Jemdet Nasr is 3.60 cm long, and represents a fish with a big dorsal fin. It is somewhat roughly cut with no details beyond the outline. A small suspension hole was bored through the nose of the fish (3440; Oxford).

The two curious beads illustrated in Plate LXXIV, Fig. 8, one of which is also shown in Plate LXXI, Fig. 13, should perhaps be regarded as amulets. Both are of bone and exceedingly well made and finished. They are incised with zigzag lines set close together. A small hole runs longitudinally through the center of each, evidently for a thread; and the boring of a hole through an object of such length, even if done from both ends, argues a certain amount of skill. Beads of this description were unknown in the "A" cemetery at Kish and in later times. They may therefore afford valuable evidence for dating other mounds (3091; Oxford. 3120; Field). A very similar bead to these was found in a rectangular shaft excavated in the "A" mound at Kish and mentioned on page 115 of this volume.

Figs. 14, 16-18 of Plate LXXI, two of which are pictured in Plate LXXIV, Fig. 4, seem to have been used as beads. They are either plain or have a shallow spiral line running round them. These objects were found in considerable numbers at Jemdet Nasr, and also in a very early building at Kish, as yet unpublished (see Map of Kish, this volume, No. 2). The spiral markings are explained by these beads being originally made in shell. The specimens from Jemdet Nasr are always made of fine baked clay, but the spirals were retained in imitation of the

originals. Two reasons suggest themselves for the substitution of clay for shell—either the latter material was no longer procurable, or it was too expensive to be used by ordinary people. These clay beads always have a fine longitudinal hole, which was probably made by the bead being formed around a length of straw or fiber, which burned away when the bead was baked (2596, 3306; Baghdad. 2599; Field. 2597; Oxford). These clay objects appear to resemble some found at Ur at a very early level (*Antiquaries Journal*, Vol. IX, p. 329).

EAR OR NOSE ORNAMENT Plate LXXI, Fig. 15

What might be an ornament either for the ear or nose is shown in Plate LXXI, Fig. 15. This object, which is 5.60 cm long and 9 mm thick, is nearly flat on one side and highly rounded on the other. It is made of slate (3087; Field).

V. CULT OBJECTS AND PLAYTHINGS

CULT OBJECTS Plate LXX, Figs. 10-14

The curiously shaped object, Fig. 10, is included in this chapter on the ground that it may possibly be a phallic symbol. It is 17.60 cm long and 4.45 cm in width at its widest part, and is roughly made of baked clay. It is round in section and tapers gradually toward the top which is slightly flattened. The base is flat with a slight hollow in the center (3409; Field).

Pottery cones, such as Figs. 11-13, were a common feature at Jemdet Nasr. They are all made of baked clay, are very irregular in shape and round in section, with either a flat or a rounded base. They average 8 cm in height and 2.10 cm in diameter at the widest part. The top of Fig. 11 has been carefully smoothed off, and the upper portion of Figs. 12 and 13 neatly pared with a knife or other instrument. Pottery cones similar to these have been found at Abu Shahrein in 1918 (*Archaeologia*, LXX, Plate X), at Ur (Ur Excavations [Al 'Ubaid], Plate XV), and at Mohenjo-Daro and Harappa in India, where they were found in very large quantities. Their exact use is an enigma. They were certainly not used for wall decoration, being too small for the purpose.

Fig. 14 is difficult to explain. It is 5.70 cm in diameter at the base and 5.40 cm high. It is hand-made and of baked clay (3462; Field).

GAMESMEN Plates LXX, Figs. 18, 22, 28-29; LXXI, Figs. 19-27; LXXIV, Fig. 7

Fig. 18 in Plate LXX is made of limestone in the shape of a truncated cone, measuring 4.05 cm and 2.30 cm in diameter at the base and top respectively, and 1.55 cm in height (3404; Field).

Fig. 22 also appears to belong to a game, though the shape is very different. It is well made, of a black stone veined with white, and measures 2.90 cm in diameter and 1.65 cm in height (3356; Oxford).

Figs. 28 and 29 are somewhat similar to Fig. 22, but taller. They are both made of baked clay; the first (3059; Field) is 4.30 cm high, and the second 3.70 cm high.

The interesting objects shown in Plate LXXI, Figs. 19-27, some of which also appear in Plate LXXIV, were very common at Jemdet Nasr. Specimens were found all over the site. They are obviously gamesmen, despite the fact that they take a number of different forms.

The two specimens shown in Plate LXXI, Fig. 19, are made of brown sandstone. One is 2.60 cm high and 2 cm in diameter (3338; Baghdad). The other is 2.50 cm x 2.20 cm (3339; Field). Both are very well made with perfectly flat base and rounded top.

Two very interesting pieces are shown in Figs. 20 and 21. Each is beautifully made of slate in the shape of a four-sided pyramid on a flat square base.

Fig. 20 is 4.50 cm high, and its base is 2 cm square (3337; Field). Fig. 21 is 1 mm higher, but its base is the same size (3336; Baghdad). Pyramidical gamesmen with three sides and a base have been found in the Royal Tombs at Ur by Woolley. Very much the same type of piece is known at Mohenjo-Daro, but with the sides and base of equal size.

Another form is similar to a modern halma-piece (Plates LXXI, Figs. 22–23; LXXIV, Fig. 7). A considerable number were found, and they vary but little in size, averaging 2.50 cm in height with a small flat base. These also were made of slate. Yet another form (Plates LXXI, Fig. 24; LXXIV, Fig. 7) had a rounded base and conical top; it was made of slate, or of white or pink limestone. The rounded base would preclude these pieces standing on a hard surface, but they could be used on sandy or dusty ground.

Figs. 25–27 illustrate another, very common form, which has a rounded base and is flat in section (see also Plate LXXIV, Fig. 7). Pieces of this type could hardly have been intended to stand, and it is possible they were made to be thrown, the scoring depending on the direction toward which the narrow end pointed. Both slate and limestone specimens have been found.

In these gamesmen we see a very human side of the inhabitants of Jemdet Nasr. That the games played with these pieces were extremely popular is proved from the great number found. Moreover, the finish of practically all of them is extremely good.

ANIMAL TOYS Plate LXXIV, Figs. 2–3

Not many toys were found at Jemdet Nasr, perhaps for the reason that they were made of clay that was not baked and were therefore unable to resist the dampness of the soil. Fig. 2 in Plate LXXIV must be taken to represent a dog rather than a lion on account of its tail. It is of baked clay, being 7.20 cm high. This figure is well modeled, and the slight swelling at the neck is suggestive of the ruff which is seen round the necks of some of the present native breeds of dog. In fact, we have here the short stocky animal that is so often found among the sheep-dogs of Iraq (3123; Baghdad).

The head in Fig. 3 measures 7.55 cm across, and is of pottery. It shows the long forward-reaching horns of a cow rather than of a bull. Unfortunately, the body of this animal was never found (3100; Baghdad).

The small figure at the top of Fig. 3 is 3.10 cm long. It apparently represents a dog, but as it is made of unbaked clay, it has suffered somewhat from the damp (3119; Baghdad).

The lower figure is 6.40 cm long. This also is of unburnt clay, and is somewhat weathered on one side. It again is obviously the figure of a dog (3116; Oxford).

Other animal forms that were found at Jemdet Nasr were in all probability used as amulets, and not playthings; they are described elsewhere.

VI. STONE AND METAL VESSELS

STONE Plate LXVII, Figs. 34-40

The number of stone vessels found at Jemdet Nasr is very small, a possible reason being that they were removed when the building was sacked. A few, however, are shown in Plate LXVII, Figs. 34-40.

A striking feature of these vessels is their extraordinary thickness, which was unnecessary and must have added greatly to their weight. It is particularly noticeable in the deeper jars and suggests that great difficulty was experienced in drilling out their interiors. In Fig. 35 the grinder has left a great deal of horizontal grooving, which no attempt was made to remove.

It will be noticed that Fig. 35 has four lugs perforated horizontally. It is indeed very similar in shape to the four-lugged pottery. Fig. 39 has a pair of ledge-handles on opposite sides of the neck, a feature that also occurs in a fragment of pottery found on the site, which once must have belonged to a pottery vessel. This handle is shown in Plate LXX, Fig. 3, but the stone specimen lacks the curious projecting portion of the pottery handle.

The following detailed description of the stone vessels is given for reference:

Fig. 34. Porphyry. Broken and repaired. A very simple dish, well made, and possibly used for a cosmetic (2958; Oxford).

Fig. 35. Limestone. Has four lugs. Well finished outside, but inside roughly bored. It is possible that it is unfinished (3367; Baghdad).

Fig. 36. Gray granite. Several pieces missing (3377; Field).

Fig. 37. Hard gray stone. Found broken with fragments missing. Very clumsy in shape. Interior is just a straight boring (2959; Oxford).

Fig. 38. Limestone. Partially burnt. Very thick and clumsy. A curious feature is the banded rim (3043; Field).

Fig. 39. Limestone. Found broken and pieces missing. The straight neck is ornamented at intervals with sunken metopes somewhat roughly cut. Two ledge-handles on opposite sides of the neck. Very much blackened by fire (3410; Field).

Fig. 40. Calcite. Found broken and pieces missing. Bowl-shaped, thick and heavy for size (3470; Field).

It will be noticed that, with the exception of Figs. 36 and 40, none of these stone vessels resemble those found in the "A" cemetery at Kish (Plates LV, LVI, of this volume) nor can they be compared with any of the pottery from that site. It seems evident that at the period during which these jars were made stone-working presented some difficulty to the craftsman; though he had acquired sufficient proficiency to decorate a stone jar on the outside, he was still unable to shape its interior properly. Stone vessels with thick sides and base are also

common in the archaic graves of Al 'Ubaid (Excavations at Ur [Al 'Ubaid], Plate LXII).

METAL Plate LXXI, Fig. 31

Only one metal vessel was found, a shallow copper dish, which is 9.70 cm in diameter and 2.70 cm high. It has a peculiar incurving rim and a well formed base (2957; Baghdad).

VII. SEALS

CYLINDER SEALS Plates LXXII, Figs. 20-21; LXXIII

A considerable number of cylinder seals, the majority in good condition, were found on the Jemdet Nasr site. All are short and straight-sided, and in some cases the diameter exceeds the length, whereas the cylinder seals found in the "A" cemetery at Kish are in most cases considerably longer than they are thick. The shortness of the Jemdet Nasr seals recalls the form of the very early cylinder seals of Egypt, though the designs differ.

The seals are most frequently made of a comparatively soft stone, and it is of interest to note that only one specimen has been found of shell, a material very commonly met with in the early cemeteries at Kish. Though shell was known to the people of Jemdet Nasr, especially mother-of-pearl, its value for seal-cutting was apparently not fully realized.

Of the twenty seals found, nineteen are illustrated in Plate LXXIII. The remaining one was in too poor a condition to make a satisfactory photograph or even to make an impression. The stone most frequently used is limestone, of which twelve seals are made, five of a pinkish variety of the stone. Three are of marble of either a dingy white or gray color, and three of a coarse kind of alabaster. One seal is of glaze, and another of a hard dark-colored stone which it is difficult to identify.

All the seals are of primitive workmanship, and the art of seal-cutting was evidently not very far advanced. One would have expected that people who were capable of producing such beautiful and well-finished pottery as was found at Jemdet Nasr would and could have produced finer work in their seals. It is possible that the demand for seals at this early time was not very great, for the reason that, as shown by the tablets, the art of writing was just emerging from its infancy. As writing improved and spread, so would the demand for seals increase, with the result that more people would be employed in seal-cutting and better work be done.

The smallest seal found is 1.20 cm long and 1.40 cm in diameter, and the largest 2.30 cm long and 1.90 cm in diameter. Every seal is perforated, or it was intended to perforate it, to take a cord, with the exception of the two shown in Plate LXXIII, Figs. 30 and 31, each of which has a perforated lug at one end. The holes through the seals vary in diameter from 3 to 4 mm, and some of them show a considerable amount of wear through friction of the cord. As the greater number of the seals are made of comparatively soft stones, the holes were bored without difficulty; it seems to have been done from both ends, though the shortness of the seals would have easily permitted of their being bored from one end only.

Two seals, which were otherwise finished, were not bored through. Fig. 21 in Plate LXXIII has a small hole, 3 mm deep, at one end; and at the other end a tapering hole, 13 mm deep and 7 mm in diameter on the outside. This seal, which shows signs of much use, must have been fixed in a holder of some kind. The hole

through the seal shown in Figs. 9 and 29 was bored from both ends, where it is 9.50 mm in diameter. The middle of the hole is only 2.50 mm in diameter. It is possible that the ends of this seal were capped, possibly with gold, the metal being also used to fill in the deep lateral grooves flush with the face.

All the seals appear to be hand-made; they show no evidence of having been made on a lathe. Despite this fact they show a remarkable regularity, especially in the case of the harder stones, which was doubtless effected by rolling the seal along a groove in an abrasive.

As two seals were found, as mentioned above, which had not been completely bored through, though they were otherwise finished, it seems that the process of boring was performed last, and that the partially completed seal was not rounded by threading it and then rolling it. Some of the holes are worn at the edges, probably by the friction of the cord on which they were carried. But, on the other hand, some of the holes show no signs of wear whatever, an additional proof that unless the ends were trimmed down after the completion of the seal, the hole played no part in the making of the seal. It is possible that these seals were made from blocks of some length, which were cut into sections. If this be so, the supposition that the boring of the hole was the last stage in the making of a seal is all the more likely. The fact that the hole is always in the center of the seal shows creditable craftsmanship; for it is, of course, easier to make the seal true with the hole through it by the rolling or sliding method of shaping than to make the hole accurately through the center afterwards.

The designs on the seals, as will be seen from the plate, show no great variety. The favorite motive is the file of animals, all, it should be noted, facing one way. These animals are difficult to identify—they seem to be antelopes, but of what species it will be the task of a zoologist to determine. It will be noticed that they are represented sometimes as running, sometimes at rest. They are doubtless arranged in file primarily to suit the shape of the seal, but also owing to the artist's lack of knowledge of perspective. It should also be borne in mind that antelopes when frightened and on the move invariably appear from a distance to be in file. It is a moot point whether the animals represented on these seals are domesticated or wild. Some species of antelopes are capable of domestication, as, for instance, the eland of South Africa.

Seal 1 in Plate LXXIII is exceptionally interesting, because it shows how the designs were cut. They were probably first drawn on the seal and then marked out roughly with drill holes. Then the holes, which vary in size and depth according to the parts of the animal, are linked up by means of a chisel or similar instrument until the whole of the outline has been cut. The chisel would invariably leave a considerable amount of roughness, and in most of the seals this appears to have been removed by means of an abrasive. In a well worked seal the chisel marks and drill-holes entirely disappeared, the surface of the cutting being left as smooth as the surface of the seal, and in some cases actually polished. The abrasive used may have been emery; it was possibly applied with a small copper or wooden tool with a rounded point.

Seals 5-6 and 20 are somewhat difficult to interpret. Fig. 20 is perhaps the clearest; it apparently represents a shoal of fish. The objects depicted have been identified by some as lice. I think, however, that fish are more probable. Seal 5 evidently has the same motive, but the figures resemble turtles rather than fish. In Fig. 6 the detail is more clear, but still it is quite impossible to say whether we have here fish, flesh, or fowl. Fig. 21 is yet more elaborate, and the position of the objects in the upper and lower rows is reversed. They possibly represent an animal with two legs and two wings, perhaps an ostrich.

Every seal, it will be seen, is bordered with a line above and below, which in the majority is very roughly cut. Not one seal with a double register was found in the site, though this type of seal is common in the later periods. The reason is doubtless the shortness of the seals of this early period. The art of seal-cutting and designing shows a great advance in later periods; as, for instance, at the period of the "A" cemetery at Kish.

A noteworthy feature of the Jemdet Nasr seals is the comparatively large proportion which bear geometric designs, based, however, on natural objects. At least six out of the twenty found are of this description (Plate LXXIII, Figs. 7-8, 10, 16, 22-23). Fig. 7 appears to represent a group of trees with a border on one side. Fig. 8 resembles a very much conventionalized animal form with the addition of two intertwining lines. Figs. 10 and 16 are obviously purely geometrical, and the origin of their designs has disappeared. The motive of the latter seal somewhat resembles a design found on some of the pottery, but the absence of a midrib precludes this design having been derived from a palm leaf. In Fig. 22 we definitely have the representation of an animal of some kind, but regularly placed and set in panels separated by fine lines. The design of Fig. 23 probably represents human figures arranged in groups of two. This seal is peculiar in that its design is set at right angles to the axis of the seal, a feature which is also known in a seal found in the "A" cemetery at Kish, pictured in Plate XLI, Fig. 9, of this volume.

PRESS SEALS

Six press seals were found, five of which are pictured in Plate LXXIII. The remaining one was too badly worn to be reproduced successfully. Two of these seals were made of baked clay, two of limestone, one of which is pinkish in color, one of shell, and the last, which is badly worn, of alabaster. The designs are of a very simple nature, the most complicated being that in Fig. 14, which appears to represent a group of animals. Compare this design with that on a press seal found at Musyan (*Mém. Dél. en Perse*, VIII, p. 4, Fig. 7). These seals are invariably roughly made; they are round or slightly oval in form with a flat or slightly convex base and a domed top. Each has a hole for suspension. Press seals of this kind are common in the lower levels of Susa in Elam, and most of them resemble in form, technique, and, in many cases, design, those from Jemdet Nasr. All appear to have been made by the same people.

Fig. 11 is of unusual form. It is made of shell in the shape of a pig(?) or hedgehog(?), and was probably carried on a necklace. It is 2 cm long, and its base is flat

with four pits in it for the seal mark. The two eyes of the animal seem once to have been inlaid (cf. Delaporte, *Catalogue des cylindres orientaux*, I, Plates 1, 8a-b, and II, 4-5, 7).

The design shown in Fig. 25 is most peculiar; it seems to have some affinity with the svastika, except that it has three fringed arms instead of four simple ones (cf. *op. cit.*, I, Plate XXVII, No. 13). (Compare also with Plate XLII, Fig. 7, of this volume.) Fig. 15, though exceedingly simple, is a very effective design for a seal. A design such as this, simple though it may be, is, when made by hand, exceedingly difficult to forge; it is, therefore, in this respect, quite as effective as a more elaborate design. Simple hatching such as this is known on some of the archaic seals from Elam. (*Mém. Dél. en Perse*, XVI, Plate I, Fig. 1; Delaporte, *op. cit.*, I, Plates 38, 49, and 61.) The device also is seen on a certain type of seal from Mohenjo-Daro.

LUGGED SEALS

Only two of this variety of seal were found (Plate LXXIII, Figs. 30-31). They are actually cylinder seals with the addition of a small perforated lug at one end to take a cord, and they were most likely worn on a necklace. Their designs are shown in Figs. 16-17. Nothing quite like these two seals has been found in later times in Mesopotamia. There is an unpublished specimen from Egypt that resembles them in the Edwards' Library at University College, London, dated to the late predynastic period. Two seals of this type are illustrated in Delaporte, *op. cit.*, I, Plates 19, Fig. 3b; 37, Fig. 6a. A similar seal may possibly be represented in Plate 63, Fig. 3a. All these seals were found in early levels at Susa.

These two seals from Jemdet Nasr are made of limestone: one is of a pinkish tint, and the other white. They are drawn full size in Plate LXXII, Figs. 20-21. If this form of seal eventually proves to be confined to one period, it will be invaluable for dating purposes, for by its nature it would not easily be destroyed.

The most interesting of the cylinder seals are those bearing human figures (Figs. 9 and 24). Fig. 9 is made of brown limestone, and is divided by deep grooves into three compartments, which is a most unusual arrangement in a cylinder seal. The design is also peculiar on account of the reversal of one of the scenes, which can hardly have been unintentional. The motive is the same in the three compartments—a woman seated on a mat making bread (cf. an almost identical one found at Susa in *Mém. Dél. en Perse*, XII, p. 105, Fig. 96; also a seal in the Louvre in Delaporte, *op. cit.*, II, Plate 69). That the figure is a woman is indicated by the length of the garment worn. Fig. 24 is of pink limestone and represents a procession of men or women, each carrying a long staff with a large round head and a weight near its foot (cf. Delaporte, *op. cit.*, II, Plate 69, Fig. 5). This object may have been used for crushing barley like the long pestle used for this purpose in modern Mesopotamia. The object on the head of each of the figures may represent a wig or hair with a cue hanging behind. (Compare with

Plate LXXIV, Fig. 5 [No. 3315].) It is impossible to say whether the figures are male or female, but the latter seems probable.

Two pieces of stamped unbaked clay were found at Jemdet Nasr, which evidently once belonged to one another, though they cannot now be made to fit. They are shown in Plate LXXVI, Fig. 13. These fragments appear to have been used to test a cylinder or a stamp seal, judging from the repetition of the impressions. An interesting feature about these impressions is the cross-patée motive, which is not found on the painted pottery from Jemdet Nasr, but does repeatedly occur on the wares of Musyan and Susa. For early seal impressions from Elam in which this motive appears, see *Mém. Dél. en Perse*, XVI, Plate III, Fig. 48. Also Delaporte, *op. cit.*, I, Plate XVI, Fig. 12.

TABULATION OF SEALS

The seals in the appended list, as stated before, are all represented in Plate LXXIII, with the exception of the last one which was in too bad a state to reproduce. The registered number of each is given and also the museum to which it was sent.

CYLINDER SEALS

- Fig. 1. 23 x 19 mm. Limestone. Long-horned antelopes in file (3064; Oxford).
- Fig. 2. 16.50 x 14.50 mm. Alabaster. Antelopes in file, crudely portrayed as running (2580; Oxford).
- Figs. 3 and 28. 21.50 x 19 mm. Marble. Antelopes in file with long horns reaching well over the back (2578; Baghdad) (cf. Delaporte, *op. cit.*, I, Plate XXV, Fig. 7).
- Fig. 4. 16.50 x 17.50 mm. Pink limestone. Antelopes running through a thicket (?) (3357; Oxford).
- Fig. 5. 13 x 10 mm. Alabaster. Shoal of fish (?) (3109; Baghdad).
- Fig. 6. 15.50 x 14 mm. Limestone. In compartments not separated by lines—two fish (?), two unknown objects, followed by two antelopes running (?) (2575; Field).
- Fig. 7. 15 x 11 mm. Alabaster. Trees (?) separated by a ladder partition (3131; Baghdad). For a similar partition see Delaporte, *op. cit.*, I, Plate I, Fig. 11.
- Fig. 8. 18.50 x 16 mm. Gray marble. Two wavy lines crossing one another at intervals, enclosing a line of beads. Rough bead-like design above and below this central motive. The design may possibly represent a number of fish caught in a net (3302; Oxford).
- Figs. 9 and 29. 19 x 21 mm. Brown limestone. Divided into three compartments by deep grooves. Female figure in each seated on a mat making bread (2579; Oxford).
- Fig. 10. 12 x 14 mm. Broken zigzag line between two straight lines also broken (3130; Baghdad).
- Figs. 16 and 30. 15 mm long, with loop 20 mm long. Diameter 11 mm. Limestone. Chevron lines rather roughly cut (2583; Field). Cf. Delaporte, *op. cit.*, I, Plate XIII, Fig. 1.
- Figs. 17 and 31. 13.50 mm long with loop 20 mm long. Diameter 10.50 mm. Pink limestone. Antelopes with long horns running in file (3129; Baghdad).
- Fig. 18. 22 x 19 mm. White marble. Antelopes without horns running in file (3341; Field).

- Fig. 19. 15 x 14.50 mm. Dark limestone. Procession of long-horned antelopes in file (3036; Field).
- Figs. 20 and 27. 21.50 x 16 mm. Pink limestone. Fishes (?) arranged in three rows (3005; Baghdad).
- Fig. 21. 19.50 x 14 mm. Limestone. Unfinished. Design of fishes (?), an octopus (?), and ostriches (?) (2577; Baghdad).
- Fig. 22. 20 x 16 mm. Dark limestone. In compartments divided by vertical lines. Each compartment contains two objects difficult to identify, but which may be running antelopes (2576; Baghdad).
- Fig. 23. 20 x 14 mm. Hard black stone. Rough representation of trees or even possibly human figures, arranged lengthways (3342; Oxford).
- Fig. 24. 22.50 x 24 mm. Pink limestone. Procession of women (?) in long robes, each carrying a staff, or perhaps women crushing barley (3301; Baghdad).

PRESS SEALS

- Fig. 11. 20 mm long. Shell. Flat base with four rough pittings (2584; Baghdad).
- Figs. 12 and 13. 18 mm long, 9 mm high. Limestone. Plain crossed lines (3132; Baghdad).
- Fig. 14. Base 26 x 28 mm, 12 mm high. Baked clay. Figures difficult to identify (3303; Field).
- Fig. 15. 31 mm in diameter, 19 mm high. Pink limestone. Base slightly convex (3086; Baghdad).
- Figs. 25 and 26. 40 mm in diameter, 23 mm high. Baked clay. Face slightly convex. Design sharply cut with a knife or similar instrument (2581; Baghdad). Compare with Plate LIX, Fig. 11, of this volume.
- Not illustrated. 38 mm in diameter, 23 mm high. Alabaster. Face slightly convex. Back highly rounded. Design a series of irregularly placed pittings (2582; Oxford).

VIII. CONCLUSIONS

There can be no doubt that the culture which produced the pottery and other small antiquities of Jemdet Nasr was closely akin to that of the lower levels of Susa and of Musyan. The design on the seal seen in Plate LXXIII, Fig. 9, has an almost exact counterpart on a seal from Susa; and this motive is so unusual that it could not have been employed in two separate countries unless there were some connection between the peoples inhabiting them. Also, the two lugged seals found at Jemdet Nasr are of a very unusual type, yet we find that this form of seal was in use in the earliest period of Elam. And again, certain very curious press seals, of which the back is carved in the shape of an animal and the face is frequently very roughly incised, are a feature of early Elam. It was, therefore, interesting to find a seal of the same type (Plate LXXIII, Fig. 11) at Jemdet Nasr, with, moreover, similar pitted marks in its face. These circumstances alone prove definitely, I think, that the inhabitants of Jemdet Nasr and of early Elam were very closely connected; if, indeed, they were not the same people.

Another interesting point of resemblance lies in the technique employed in working vessels of stone. Unfortunately, but few of these were found at Jemdet Nasr, and we cannot, therefore, safely draw parallels between their shapes and those found in Elam. But the thick and clumsy nature of these utensils was duplicated in early Elam and also among stone vessels found in the Al 'Ubaid cemetery II.

Other points of resemblance occur in the shapes of several types of pottery vessels found at the three sites. The thick red slip that is so characteristic of the painted ware of Jemdet Nasr is also seen on similar jars from Musyan.

I have already pointed out that although the painted pottery of Jemdet Nasr is probably of rather later date than that of Musyan and Susa II, the similarity of some of the motives employed in the decoration of all three wares also strongly suggests that they were made by people who were closely allied by race.

It is not only in the seals and pottery that parallels are found with Elam, but in other objects also. The very curious stone objects shown in Plate LXXV, Fig. 5, which are thought to be bolas balls used in hunting game, have also been found at Susa. So unusual are they in shape and grooving that they again could hardly have been invented independently; they alone would prove connection between the two sites.

The curious spatula-like objects shown in Plates LXXI, Fig. 29, and LXXV, Fig. 8, have been found also at Susa. The Jemdet Nasr specimens were, however, of hard baked pottery, and those at Susa of copper. But the similarity of shape again indicates a connection; the Jemdet Nasr examples are probably only models.

The only point of contact that I can find between the wares of Susa I and the period of the "A" cemetery in Mesopotamia is that among the designs on some of the cups from Susa I (*Mém. Dél. en Perse*, XIII, Plates V, Figs. 1, 3 and 6; VII, Fig. 7), there occur curious wand-like objects exactly similar to the copper wands

found in the "A" cemetery at Kish (this volume, Plates XVII, Figs. 5-6; LXI, Figs. 2-4, 10-11). Even the notched ends of these wands are carefully delineated on one of the cups (Plate LXIX, Fig. 7). There is therefore no doubt that this very curious implement of warfare or the chase was in use both in the early Susian period and later at Kish; and if the painted pottery of Susa I is greatly anterior in date to the Kish cemetery, these copper wands must have been used over a very long period of time.

The motive of animals in file is a common one on the Mesopotamian seals of very early date. In some cases the arrangement of the legs of these animals is remarkable; and this is so on seals from both Kish "A" and Jemdet Nasr. In Plate VI, Fig. 2, of this volume, two antelopes are seen, each with its legs bent in a curious way beneath it—whether represented as running or resting on the ground is a moot point; and exactly the same posture is seen in Plate LXXIII, Fig. 2, of this volume. It should not be forgotten, however, that seals may have been re-used, especially in early times when they commonly bore no inscription. Presumably there was nothing to prevent a seal being picked up at Jemdet Nasr or elsewhere and used again at a later period; it may have been by some one who was ultimately buried in the "A" cemetery. There are, it appears, no antelopes so portrayed on the early seals of Elam.

From the style of painting Woolley dates the Jemdet Nasr pottery before the time of the "A" cemetery at Kish. In this he is right. The thick red slip, the small perforated lugs, and in some cases the shapes of the vessels prove the pottery of Jemdet Nasr to be near in date to the Musyan and Susa II pottery. How near in date the Jemdet Nasr period comes to the Kish "A" period, it is at present impossible to say. Personally, I am of opinion that a somewhat lengthy period must have elapsed between the two, for the Kish cemetery overlay a large building whose plano-convex bricks and architectural features show it to be Sumerian in origin. This palace had fallen into decay before its site was used as a cemetery, and on a conservative estimate we should, I think, allow at least three hundred years between the dates of the building and of the cemetery. Only two small fragments of painted pottery were found in the chambers of the palace and they lay at a much higher level than the flooring of that building, so that they must be regarded as accidental. Nor are we at all sure that the palace in the "A" mound marks the beginning of the Sumerian civilization in Babylonia. It seems to have been too well built; and the use of round brick columns in its construction establishes an advanced civilization.

It is much to be regretted that no burials were found at Jemdet Nasr; but as that site was very much denuded, it is probable that the graves which must once have existed in the vicinity have disappeared from the same cause. Even with the smaller number of objects found—burials would undoubtedly have yielded more material—we are able to prove an advanced chalcolithic civilization in Babylonia at that very early period. The occupants of that site knew and practised the art of writing, employing the clay tablet as a medium. They were acquainted with weaving, as shown by the number of spindle-whorls that were found; the

small size of some of these suggests that it was a fine thread that was spun, but it may have been either cotton or flax. Cotton is quite possible as this fiber was in use in India, in or before this time.

The fact that fishing was an industry is proved by the well-made fish-hooks that were found, each with efficient barb and shank. The hunting of game is suggested by the motives on some of the cylinder seals and by the occurrence of what may be bolas balls. The inhabitants of Jemdet Nasr knew the art of working copper and made well shaped and efficient implements of warfare in that metal, as well as metal vessels.

The art of brick-making was well advanced, and efficient bricks, both in size and shape, were used in buildings that compare favorably with those of considerably later date. In fact, the bricks of Jemdet Nasr are actually superior to any others made in pre-Sargonic times. The masonry of the building or buildings at Jemdet Nasr was exceptionally good, and the alignment of their walls remarkably accurate. Such refinements as pottery gutters to carry off rain bespeak an advanced state of civilization, and baked bricks were used to pave some of the rooms.

In the working of stone, however, the people of Jemdet Nasr were not so proficient. Flint implements were limited to the roughest of agricultural tools and a few flint flakes; but it is possible that no use was found for them as the working of metal was so far advanced. Finely worked flint implements, such as arrow-heads, would seem to be associated only with the earliest type of painted pottery, as in the first period of Susa. That great difficulty was experienced in working stone is more conclusively proved by the crude manner in which stone vessels were hollowed out, though it must be confessed that the outsides of these vessels were on the whole well done. The degree of a man's skill in stone-working is perhaps best illustrated in the making of smaller articles, such as cylinder seals; and the seals found at Jemdet Nasr are very primitive both in design and execution.

That agriculture was practised is proved by a store of wheat (*Triticum vulgare* or *T. compactum*) discovered by Professor Langdon, which, though badly carbonized, is still readily recognizable. According to Professor Percival, the wheat found at Jemdet Nasr is *Triticum turgidum*. The professor states that the seeds are small, dark red, with blunt ends and that they have a dorsal hump characteristic of this species. It is the most prolific of all the numerous kinds of wheat and its straw is rank and extremely tall. (Letter from Professor Langdon, the *London Times*, Jan. 29, 1927.)

The craft in which the people of Jemdet Nasr chiefly excelled was the manufacture of pottery. They used the wheel and produced pottery that compares favorably with that of later periods, both in form and in the use of colors and colored slips for its decoration, an art which disappeared early in the history of Babylonia.

Judging from the figure in Plate LXXIV, Figs. 5-6, the women seem to have worn their hair in plaits down the back. This would explain the shortness of the

few hair-pins found, compared with the long pins which were used at a later period to keep the hair piled upon the head.

A certain amount of jewelry was worn, but it does not compare favorably with that of the later periods. The art of glazing was practised; and beads made of this material and used in conjunction with green felspar provided a certain amount of color, but the majority of the stones used were dull and uninteresting in nature with the exception of crystal, which was evidently well known. Amulets were, of course, greatly worn, as is common to all Eastern peoples, and they show an interesting diversity of form.

In their pleasures the people of Jemdet Nasr were probably very simple. The children played with model animals made of baked or unbaked clay, while the older people appear to have whiled away their spare time with games whose pieces resemble draughtsmen and skittles.

These various accomplishments place the people of Jemdet Nasr on a level with the present Arab tribesmen of Iraq. They would seem to have been long established in the land; they were not wandering pastoralists constantly on the move and requiring utensils that were not easily broken or damaged.

We now find ourselves face to face with the exceedingly difficult problem of the race to which the inhabitants of Jemdet Nasr belonged. Were they Semitic, Sumerian or another stock? Before attempting to answer this question, it should be remembered that the crude mud bricks of the buildings at Jemdet Nasr were of unexpected size and shape. Instead of being an early form of the plano-convex brick, which has hitherto been thought by archaeologists to be the earliest type of brick used in Mesopotamia, we found bricks of rectangular shape with flat base and top, measuring either 20 x 8.50 x 8 cm or 23 x 9 x 6.50 cm. Of the former size, both baked and unbaked bricks were found, and of the second, which was probably used for tiles, only baked specimens were found.

A very noticeable feature of the burnt bricks was a series of three holes running diagonally through every one of them (Plate LXX, Fig. 25), whether used in wall or pavement. The holes were made with a stick, and are fairly regular, averaging 1 cm in diameter. The bricks are well made with the sides narrowing slightly toward the top; they were shaped in a frame mold.

A few larger bricks of a different type were also found in the mound. These measure 29 x 16 x 5 cm, are baked, and bear on the under side the impression of the reed matting on which they were made, as is the case with Nebuchadnezzar bricks. These larger bricks also are perforated with three holes.

The presence at Jemdet Nasr of these well made rectangular bricks with the upper surface perfectly flat raises the question why this type of brick gave place later to the less efficient plano-convex type. It is possible, of course, that the two patterns were used side by side; but if so, they would probably have been found together at Jemdet Nasr, which was not the case. Are these very early rectangular bricks, then, the product of entirely different people from the Sumerians as we know them at Kish and elsewhere? From the striking evidence we have before

us in the shape of the bricks they used and the pottery they made, it would seem so. It is possible to see in the building and objects found at Jemdet Nasr traces of a people who may have inhabited Babylonia and Elam before the arrival of the Sumerians; the latter would seem to have been at first less cultivated in some respects than the people of the country they entered.

A very striking feature of the numerous tablets found associated with the painted pottery at Jemdet Nasr is that they are inscribed with extremely archaic characters, that I am assured by Professor Langdon are Sumerian. If this be so, it should follow that the people who wrote these tablets were also Sumerians. Of what race, therefore, were the invaders who introduced the plano-convex brick and apparently adopted the writing of the people that they conquered? We have no evidence that they were Semites; indeed, later inscriptions prove the contrary. The fact that the use of the plano-convex brick extended over a considerable period of time proves that the occupancy of the country by the people who introduced it was also a very long one.

Before weighing up these considerations, there are still other problems to be noted. Among the beads found at Jemdet Nasr, carnelian was very rare and lapis lazuli was entirely absent, but we have proved from the "A" cemetery at Kish that both stones were extremely common at a later date, approximately 3000 B.C. or a little earlier. The inhabitants of Jemdet Nasr were not distinguished by the good quality of the beads they made, whereas the people of the "A" cemetery at Kish produced or imported beads of very fine workmanship. Again, shell, which was extremely common in the "A" cemetery, was rare at Jemdet Nasr. Only one cylinder seal made in that material was found there, though shell was by far the most popular material for seals during the later periods. The art of glazing beads and other small objects seems, however, to have been common to both places.

Except for a few details, the pottery from Jemdet Nasr does not resemble the pottery of the "A" cemetery at Kish either in mode of decoration or in shape, though there is a feeling that the pottery of the "A" period was in some indefinite way influenced by the pottery of the earlier period.

With these facts before us, we may have to reconsider the racial origin of the inhabitants of Jemdet Nasr and to conclude that they were not themselves Sumerian, but were conquered by Sumerians, and that the latter people did not previously know the art of writing, but borrowed it from the conquered race.

Many of the objects recently unearthed at the chalcolithic sites, Harappa and Mohenjo-Daro, in India are allied in character to similar objects found in early Sumer. Resemblances may also be traced between objects from Jemdet Nasr and the Indus Valley civilization. I cannot here anticipate the reports on the investigations in the culture of prehistoric Sind, but many of the motives on the decorated pottery of Jemdet Nasr resemble those on the painted ware of the Indus Valley civilization, as also the motives on the painted wares of Musyan and Susa II. It may even be found after extended investigation in Mesopotamia that the three great civilizations of Jemdet Nasr, early Elam, and prehistoric

Sind were closely allied with one another. The early culture of Baluchistan is probably to be regarded as related to that of Sind.

Professor Sayce (*Who were the Amorites? Ancient Egypt*, pt. III, 1924) has shown that the Murru, or Amorites, occupied Babylonia in very early times; and two passages in the very old legend of Enmerker and Lugalbanda show definitely that the Amorites once occupied both Sumer and Akkad (Oxford Editions of Cuneiform Inscriptions, I, pp. 5-8. "In Sumer and Akkad altogether the wicked Amorite [Mur-ru] shall he expel."). They were subdued, not without trouble, by the Sumerians, and eventually became reconciled to their conquerors, as we know from various inscriptions. As Sayce puts it, "they enjoyed equal rights and privileges with the native Babylonian in historical times." The occupation of Babylonia by these Amorites must, I think, have taken place after the conquest of that country by the Sumerians and not before. It is indeed possible that it began soon after the Sumerian entry and that the civilization that is represented at Jemdet Nasr was disturbed by enemies that entered the land both from the south and north. All this is, of course, pure conjecture; but the Semitic element in very early Sumer must be accounted for, and it seems to me certain that the prehistoric inhabitants of Babylonia were not Semitic.

It has not yet been decided from what direction the Sumerians came, but Sumerian tradition itself points to the south. The very extensive use made by the Sumerians of shell and mother-of-pearl, materials plentiful in the Persian Gulf and Indian Ocean, strongly supports the idea that they entered Babylonia from that quarter.

It has been suggested that the temple-tower, or ziggurat, was introduced into Babylonia by the Sumerians and that it is to be regarded as a proof that they came from a hilly country. Whether this be so or not, I would point out that the material from Jemdet Nasr shows that, as compared with the early Sumerian, the inhabitants of that place were comparatively poor workers in stone; so also were the people of the Indus Valley civilization. The art of working stone would be naturally confined to the people of those countries where it could easily be procured, or to migrants from those countries; and we cannot expect to find the art practised at all extensively by old inhabitants in an alluvial country, such as Babylonia, where stone is entirely absent.

ADDITIONAL NOTES

BEADS Plate VII, Fig. 7

A bead very closely resembling this one, described by Mr. Gordon Childe in his "Most Ancient East," p. 191, as "two axially gadrooned globulars united by a segmented tube," has been found at Byblos in Syria, where it was dated to the period of the IV-VI dynasties of Egypt.

HANDLES Plate XLIII, Fig. 2

A long glazed bead said to have come from an Old Kingdom mastaba in Egypt and now in the Edwards Library, University College, London, resembles both in material and decoration these handles from Kish. The dating of the two also approximately agrees. And in the Ashmolean Museum at Oxford there are very similar objects to those from Kish, which were found in Egypt and dated to the eighteenth dynasty.

POTTERY RINGS Plate XLIV, Fig. 2

Many of these pottery rings have been found at Mohenjo-Daro, where they were at first thought to be stands for pottery. No pottery has been found, however, for which they could have been used. The pottery rings from Kish would only be suitable for vases with round bases, and even this type of jar would rest very insecurely on them. I still think that they must have had another use.

POTTERY ANIMAL Plate XLVI, Fig. 3

This model of a ram which once had wheels was found in the débris of the "A" palace at Kish, and in all probability should be dated to the period of the "A" graves. A very similar figure, found in the lowest levels at Ur, Woolley describes as a zoomorphic vase, a category in which it seems to me it can hardly be included. The great similarity between these two models certainly suggests their belonging to the same period, but I should hesitate to date the Kish example even as early as the Jemdet Nasr period (*Antiquaries Journal*, Vol. X, No. 4, Plate XLIIa).

POTTERY DISH Plate LII, Figs. 25-26 (see also Plate XLIV, Fig. 12)

A dish almost exactly similar with inturned handles has been found at Ur and dated there to the Jemdet Nasr period. The two specimens from Kish, unfortunately, were not found in the graves and therefore cannot be exactly dated; but I should hesitate to regard them as belonging to the Jemdet Nasr period since no relics of that date were unearthed from the "A" mound. Possibly, however, this type of dish was so useful that it persisted from that time down to the period of the "A" graves. Indeed, Woolley has stated in his guide to the British Museum Exhibition for 1930 that dishes of very similar type are actually in use at the present day.

IMITATION SHELLS Plate LX, Figs. 3-4

These imitation shells from the "A" cemetery, which are of lapis lazuli, closely resemble in shape two shells carved in ivory which were found by Mr. Guy Brunton in predynastic settlements in Upper Egypt. The same, or closely allied, species of seashell seem to have been copied by the two peoples (The Badarian Civilization, Plate XLIX).

BRICKS Plate LXX, Fig. 25

Bricks very similar to these both in shape and size have since been unearthed from very early levels at Ur, but made of some kind of cement instead of mud. The Jemdet Nasr type of brick was therefore not merely a local variety, but was probably used at that time throughout Mesopotamia (*Antiquaries Journal*, Vol. X, No. 4, p. 333).

PINS Plate LXXI, Figs. 11-12

The spiral grooving on these two pins is very curious, and, though one would hardly expect to find this form of ornamentation in any country at such an early period, it occurs

also on an ivory rod found by Mr. Guy Brunton at Badari in Upper Egypt (The Badarian Civilization, Plate XXIV, Fig. 6). The ornament on these two examples from Jemdet Nasr and the one from Badari may have originated independently, even though they may belong to approximately the same period. One is led by these examples to wonder whether the invention of the screw is rightly attributed to Archimedes, and whether it was not known much earlier, even though in its early stages it was perhaps merely a form of ornamentation.

GAMESMAN Plate LXXI, Fig. 24 (Plate LXXIV, Fig. 7)

From the description given, even including the material (pink limestone), it seems that a pointed, pear-shaped, marble-like object of predynastic date, found at Hemamieh, Upper Egypt, closely resembles some that have been unearthed at Jemdet Nasr (The Badarian Civilization, p. 60 (128)).

THERIOMORPHIC JAR(?) Plate LXXVI, Fig. 2

On further consideration, it is to be doubted whether this pottery animal should strictly be called a theriomorphic jar. I am now inclined to regard it merely as a model of a pig and to doubt whether it was ever intended to be filled with a liquid. In the process of baking a vent had to be provided for the escape of gases, and what more natural place than the mouth of the animal? In posture this animal can be compared with the steatite animal, also of the Jemdet Nasr period, lately found at Ur (*Antiquaries Journal*, Vol. X, No. 4, Plate XL1b).

INDEX

- Ablutions, 144
 Abrasives, 54, 126, 132, 172, 282
 Abu Shahrein, 250, 265, 270, 277
 Adab, 73
 Adzes, 13, 41, 42, 97, 119, 157, 159, 165, 177, 204, 265
 Africa, 59, 191, 282
 Agade, 7, 73
 Agate, 134, 138, 181, 182, 189
 Agriculture, 135, 137, 289
 Ahaimir, Tell, 47, 79, 80, 82, 117, 144, 207
 Air-map, 79
 Alabaster, 52, 125, 199, 200, 203, 272, 281, 283, 285, 286
 Alexander the Great, 73
 Alloys, 50
 Al 'Ubaid (el-Obeid), 124, 129, 156, 228-230, 242, 265, 266, 275, 277, 280, 287
 Aly-Abad, Tépé, 240, 253, 259
 Amethyst, 138
 Amorites, 292
 Amulets, 15, 16, 51, 57, 132, 133, 138, 183, 209, 274, 275, 278, 290
 Anatolia, 214
 Anau, 257
 Andrae, W., 27, 204, 214, 215, 227
 Andrews, 185
 Animals, see Figures
 Annex, 9, 76-78, 84, 85, 89, 93-105, 112, 113, 206
 Antelope, 57, 59-63, 147, 161, 191-198, 258, 259, 282, 285, 286, 288
 Anthropomorphic, 21, 22
 Arabia, 18
 Arabian desert, 19, 136, 205
 Arabs, 32, 142, 215, 225, 243, 268, 290
 Aragonite, 274
 Arch, 115, 116
 Archers, 94, 103
 Arghana-Maden, 17
 Armorer's shop, 87
 Armour, 157
 Arrows and arrow-heads, 59, 103, 128, 157, 158, 166, 205, 211
 Aruru, mother-goddess, 142
 Ash, 55, 88, 94, 98, 111, 116, 131, 202
 Ashmolean Museum, 243
 Asia Minor, 30
 Ass, 197, 211, 212
 Assur, 27, 142, 190, 214, 215, 227, 259
 Assyrian, 84, 85, 211, 215
 Axes, 13, 20, 38-40, 121, 126, 128, 137, 157-159, 166, 177, 179, 215, 266
 Axle, 210
 Babylon, 76, 79, 80, 142
 Badarian, 242
 Baluchistan, 230, 234, 255, 292
 Bamboo, 158
 Bandar, Tell el, 82
 Bangles, see Bracelets
 Banks, 109, 142, 215
 Barbs, 167, 265
 Barghutait, Tell, 226
 Barley, 284, 286
 Barracks, 96
 Basalt, 96, 204, 270
 Basins, brick, 95, 117
 Basket-work, 141, 175, 243, 258, 261
 Battle-axes, see Axe
 Battlements, 84, 85, 102, 103
 Beads, 16, 18, 19, 45, 47, 53, 122, 133-138, 146, 167, 170-174, 180-189, 203, 272-276, 290, 291
 faceted, 183, 184, 187, 273
 manufacture, 54, 183, 188, 273
 materials, 53-56, 182-189, 272-276, 290
 types, 47, 54-57, 183-185, 273-275, 290
 Beams, 86, 95, 100, 104
 Bear, 275
 Beard, 121, 122, 126, 191, 194, 196, 197, 212, 214, 275
 Beetle, 133, 167, 183, 184
 Belts, see Clothing
 Bench, 91
 Bilki, Mount, 18
 Birds, 59, 61, 133, 187, 213, 259, 263, 271, 275
 human-headed, 59
 Bismya, 109, 142, 169, 215
 Bitumen, 10, 11, 19, 31, 38, 40, 43, 48, 86, 88, 90-92, 95, 96, 100, 104, 109, 110, 118, 121-123, 125, 134, 136, 163, 174, 187, 193, 195, 203, 205, 206, 214, 215, 267, 269
 Bituminous limestone, see Limestone
 Boats, 60, 62, 194, 198
 Bodkins, 48, 174, 175, 268
 Bolas, 269, 287, 289
 Bone objects, 24, 35, 140, 141, 153, 181, 182, 189, 268, 271, 272, 274, 275
 Borers, 46
 Bosses, 51, 52, 177, 178
 Botta, 214
 Bowls and dishes, metal, 13, 48, 50, 175, 176
 pottery, 32, 150, 249, 250
 Bows, 59, 61, 62
 Bracelets, 13, 53, 138, 180, 181, 208, 209
 Braziers, 12, 13, 19, 24-28, 36, 130, 146-148
 Bread-making, 284, 285
 Breasts, 22, 145, 146
 Breccia, 134, 138
 Bricks, arrangement of, 107, 116
 markings, 9, 90, 95, 109, 268, 269, 290
 measurements, 9, 75, 76, 80, 82, 83, 85-101, 108-118, 226, 268, 290

- Bricks, types, 9-11, 19, 62, 75, 80, 101, 106, 108, 109, 226, 227, 268, 269, 288-291
- Bridles, 194
- British Association, 157
- British Museum, 10
- Bronze, 119, 202, 204, 209
- Brush, 232, 236
- Bubal, 191
- Bull, 46, 124, 126, 133, 171, 191, 194, 211, 278
- Burials, child, 13, 27, 32, 35, 36, 129, 135, 138, 139, 147, 190
multiple, 10, 13, 21, 129
position, 12, 13, 129, 138
proportion of sexes, 13, 129
types, 11, 27, 129
urn, 20, 130
- Burrows, Father E., 8, 225
- Bushes, 59, 61, 196, 285
- Buttons, 135
- Buttress, 86, 88, 92, 101
- Buxton, L., 130, 214
- Cairns, 27
- Calcite, 19, 38, 41, 48, 58, 61, 62, 63, 134, 190, 192, 196, 198, 205, 279
- Calf, 61, 123
- Campbell-Thompson, R., 250, 265, 270
- Camping-grounds, 225
- Canals, 80, 81, 207, 225
- Canopy, 60
- Carbon, 232
- Carnelian, 18, 53, 55-57, 133, 134, 138, 174, 181-186, 189, 272, 291
decorated, 56, 182, 184-186
heating of, 57, 185
- Cart, 211
- Caspian Province, 59
- Cast metal, 39, 46, 158
- Celts, 160, 203, 204, 266
- Cement, 99, 121, 163
- Censer, 234, 236
- Centipede, 192
- Chain, gold and silver, 131, 182
- Chair, see Stool
- Chalcolithic, 230, 234, 257, 288, 291
- Charcoal, 25, 26, 87, 88, 146, 150, 234, 242, 243, 246, 247
- Chariot, 128, 161, 166, 209-212
- China, 257
- Chisels, 42, 157, 159, 165, 166, 282
- Cist, 27
- Clappers, 206, 207
- Clay, brick, 106, 107
filling, 110
pottery, 21, 22, 25, 27, 28, 31, 36, 90, 97, 140, 141, 152, 154, 231-238, 243-251, 262, 264
- Cloth, 268
- Clothing, 13, 41, 51, 60, 137, 146, 157, 169, 177, 194-196, 198, 205, 257, 274, 284
belts and girdles, 39, 58, 105, 121, 158, 162, 168, 169, 194
- Clothing, head-dresses, 60, 63, 123, 191
kaunakes, 60, 63, 123, 191
kilts, 60-63, 121, 137, 191, 194, 195, 197
shawls, 60, 137
skirts, 62, 191, 197, 198
- Coffins, 11, 20, 130, 138
- Colonnade, 93, 100, 101, 104, 108, 111, 125, 126
- Colors, 14, 15, 16, 132, 136, 208, 232-237, 245, 253, 257, 258, 260, 273, 289
- Columns, 9, 86, 93-95, 99, 100, 108, 109, 114, 115, 118, 125, 126, 288
- Comb, decoration by means of, 23, 26, 27, 143, 147, 148, 152, 215
- Combs, 135
- Cones, 277
- Copper, household and toilet articles, 168, 169, 175, 265
personal ornaments, 43-50, 52, 53, 57, 136, 137, 178-180, 183, 187, 188, 272
sources of, 17, 134
tools and implements, 16, 17, 38-42, 87, 119, 127, 134, 137, 157-167, 204, 265, 266, 282, 287
uses of, 91, 96, 282, 289
utensils, 48-50, 175, 176, 279, 280, 289
- Cords, 43, 161, 169, 171, 172, 181, 182, 190, 203, 209, 212, 227, 229, 240, 242, 247, 249, 250, 269, 275, 281
- Corn, 32, 62
- Corridor, 85, 94, 104, 106
- Cosmetics, 15, 17, 130, 135, 137, 265, 279
- Cotton, 289
- Courts and courtyards, 7, 78, 86, 87, 100, 212
- Cow, 171, 234, 278
- Cream, 34
- Crescent, 60, 61, 194
- Cross, 144, 259
- Crown, 122, 123
- Crystal, 19, 54, 134, 138, 182, 188, 196, 272, 274, 290
- Cubits, 112, 113
- Cult objects, 277
- Cuneiform, 227
- Cups, ostrich-shell, 19, 136, 214
pottery, 27, 35, 97, 123, 126, 155, 249, 250
- Curved blades, see Wands
- Cyprus, 17
- Daggers, 13, 17, 38-41, 46, 62, 135, 137, 157, 162, 163, 179, 181, 194, 195, 274
- Darius, 74
- Decorated objects, 41, 52, 133, 134, 136, 162, 163, 168, 174, 179, 184, 209, 212, 275;
see Pottery
- Deities, 23, 60, 62, 73, 74, 76, 142, 144, 158, 214
- Delhi (Central Asian Museum), 185
- Demavand, Mount, 18
- Digits, 112, 113
- Director, of Railways, 77
of Surveys, 77

- Dishes, see Bowls
 Distaff, 168
 Doe, 259
 Dog, 124, 194, 212, 214, 278
 Dolmens, 27
 Domes, 100
 Doorways, 86, 88, 89, 91, 93, 94, 98, 100, 104, 107, 118, 198
 Dough, 32
 Drains, 76, 96, 97, 113, 115, 118-120, 204
 Draughtsmen, see Gamesmen
 Drill, 54, 55, 59, 60, 273, 279, 282
 Dungi, King, 42

 Eagle, 59, 61, 133, 192, 194, 196-198
 Eannatum, 76, 105, 128, 129, 157, 161, 164, 166, 190, 211
 Ear-picks, 137, 169
 Ear-rings, 52, 53, 122, 130, 136, 179, 180
 Ears, 22, 52, 53, 136, 145, 179, 180, 212, 276
 Ebony, 273
 Eggs, 19, 136, 214
 Egypt, 12, 13, 15, 17, 18, 28, 30, 39, 54, 57, 107, 126, 130, 138, 157, 159, 160, 165, 178, 186, 205, 211, 214, 215, 232, 235, 237, 242, 254, 259, 271, 274, 281, 284
 Elam, 18, 157, 183, 205, 226, 242, 259, 260, 272, 283, 284, 285, 287, 288, 291
 Eland, 282
 Elephant, 135, 214
 Emery, 55, 282
 Enetarzi, 18
 Enmerker, 292
 Entemena, 214
 Erech, 73
 Erivan, 257
 Errors, building, 111, 112
 Eskimos, 15
 E-temen-ni-il, 275
 Euphrates, 19, 136, 144
 Eye-brows, 22, 145
 Eyes, human, 22, 121, 123, 137, 145, 194, 195, 205, 207, 212
 animal, 124, 212, 213, 274, 284
 objects, 48, 136, 240, 263, 268

 Façade, 75
 Face ornamentation, see Cosmetics
 Facing of wall, 93, 104
 Faience, see Glaze
 Falcons, 192
 Fara, 10, 13, 15, 27, 166
 Faras, 254
 Fats, 31, 33, 125
 Feathers, 19, 61, 63, 194, 213
 Felspar, green, 138, 272, 273, 290
 Festoons, 194
 Fiber, 165, 171, 172, 173, 243, 248, 276, 289
 Figures, animal: amulets, 57, 183, 187, 274, 275; inlay, 123, 124, 126; model, 20, 210-213, 278, 290; on pottery, 147, 253, 255, 258-260, 263, 264; on seals, 61-63, 194-198, 285-286; on stone, 202
 Figures, human: amulets, 274; inlay, 120-122; model, 203, 212; on pottery, 21-23, 144-146, 207; on seals, 61-63, 194-198, 285-286; on stone, 202
 Filigree, 177, 178
 Fillets, 52, 56, 122, 137, 178, 179, 274
 Filling, 76, 107, 110, 112, 114, 118
 Finger-rings, 53, 138, 181, 202
 Fish, 133, 207, 259, 263, 275, 283, 285, 286
 Fish-hooks, 166, 265, 289
 Fish-spear, 167
 Flax, 289
 Fleece, 210, 213
 Flint implements, 23, 75, 83, 167, 203, 205, 215, 265, 267, 289
 Floor, see Pavements
 Flour, 32
 Flowers, 208
 Fluting, 45, 50, 176
 Fly, 132, 183
 Food, 36, 47, 49
 Footing, see Foundations
 Forts and fortifications, 80, 82, 84, 87, 89, 104, 105, 110
 Fosse, 85
 Fotheringham, 105
 Foundations, 78, 83-86, 88-90, 92-101, 110-112, 114-115, 117-119, 142, 208, 212
 Frankfort, 214, 257, 259
 Frieze, 124
 Fringes, 60
 Frog, 57, 133, 183
 Fuel, 25, 26, 116, 146
 Funeral equipment, 11, 24, 130, 131
 Furnace, 116, 229, 232

 Gadd, C. J., 60
 Galena, 17
 Games, 135, 206, 290
 Gamesmen and boards, 135, 206, 267, 277, 278, 290
 Garments, see Clothing
 Gautier, 157, 227
 Gazelles, 192, 255
 Genouillac, H. de, 82, 214
 Gerar, city of, 250
 Gilgamesh, 126, 191, 198, 215
 Gimil-Sin, 73
 Girdle, see Clothing
 Glass, 203
 Glaze, 16, 43, 46, 55, 56, 58, 80, 133, 134, 138, 168, 181, 182, 184, 189, 190, 193, 196-198, 202, 203, 225, 272-274, 281, 290, 291
 Glazed pottery, 43, 225
 Gnu, 191
 Goats, 20, 124, 135
 Gods and goddesses, see Deities
 Gold, 17, 18, 129, 131, 134, 135, 162, 174, 180, 182, 187

- Gourd, pottery shapes, 151, 243
 Graeco-Parthian, 10, 185
 Grain, 136
 Granite, 199, 279
 Grass, 243
 Graves, descriptions, 9-14, 128-131
 dimensions, 11, 118
 tabulations, 20, 129, 138
 Grease, 15
 Greek period, 77, 83, 114, 118, 138, 185, 202, 214
 Grinder, for jars, 279
 Guard-house, 87
 Gudea, 113
 Gulloche, 192, 196
 Gutters, 269, 289
 Gypsum, 31, 55, 86, 107, 141, 184, 205

 Haematite, 18, 35, 58, 61, 182, 189
 Hafts, see Handles
 Hair, 22, 45, 52, 57, 59, 121, 122, 126, 130, 136, 145, 146, 170, 172, 173, 179, 210, 212-214, 272, 274, 284, 289, 290
 Hair-ornaments, 44-48, 169-174, 178, 181, 271
 Hair-pins, see Pins
 Hall, H. R., 215
 Halls, 94-97, 100, 108, 109, 119
 Hamasi, 105
 Hammer, 158, 202, 268
 Hammer-stone, 125
 Hammurabi, 10, 30, 82, 108, 117, 118
 Handcock, P. S. P., 39, 214, 215
 Handles, of metal utensils, 48-50, 175, 176
 of objects, 38-41, 43, 121, 126, 134, 135, 153, 159, 161, 162, 165, 203, 205, 248, 266, 267
 of pottery, see Pottery
 of stone utensils, 279
 Harappa, 230, 277, 291
 Harpoon, 166, 167
 Harsagkamma, 74, 79, 142
 Head-dresses, see Clothing
 Hearth, 87
 Hedgehog, 213, 283
 Helmets, 157
 Herdsmen, 59, 191
 Hilt, 162
 Hit, city of, 19
 Hittite, 24, 27
 Hoe, 97, 167
 Honan, province of, 257
 Hones, 16, 167, 204, 265, 266
 Hook, 43
 Hooves, 60
 Hormuz, island of, 235
 Horns, 46, 171, 191, 194-196, 285
 Horse, 197, 210-213
 Hyksos, 211, 215
 Hub, of wheel, 270
 Human figures, see Figures

 Ibex, 195
 Implements, see Tools
 Incense, 146
 India, 27, 124, 135, 137, 138, 176, 178, 185, 192, 211, 230, 234, 258, 277, 289, 291
 Indian Ocean, 15, 292
 pottery, 27, 257
 Indus Valley civilization, 291, 292
 Ingharra, Tell, 9, 21, 23, 28, 73, 75, 77, 79, 81, 82, 109, 110, 142, 227-229
 Ingots, 87, 127
 Inlay, 40, 82, 92, 96, 97, 105, 120-125, 133, 134, 136, 205, 284
 Innini, goddess, 73, 74
 Iran, 211
 Iraq, 30, 32, 58, 124, 135, 215
 Iron, 15, 97, 123, 124, 138, 185, 204, 208, 209, 232
 Ishtar, goddess, 23, 60, 62
 Isin, 80
 Iskanderieh, 107
 Ito, T., 261
 Ivory, 135, 162, 203

 Jar-stoppers, see Pottery
 Jasper, 19, 54, 57, 134, 138, 182, 188, 204
 Jemdet Nasr, 225-292
 Jewellery, 17, 22, 51-57, 136, 137, 177-189, 204, 205, 272, 273, 290
 Joints, see Pottery

 Karun River, 59
 Kashan, 18
 Kaunakes, see Clothing
 Kerven, 18
 Kettle, 262
 Khorsabad, 214, 215
 Kid-Nun (-ki), 225
 Kids, 60, 62, 195, 263
 Kilns, 90, 108, 115, 116, 206, 233, 234, 245
 Kilts, see Clothing
 Kimash, 17
 King, L. W., 103
 Kings, 7, 10, 17, 30, 39, 42, 73, 97, 105, 120, 121, 130, 161
 Knives, 38, 40-43, 130, 157, 163, 164, 169, 194, 205, 228, 230, 239, 273, 277, 286
 Knobkerries, 158, 215
 Knobs, 261, 263
 Knot, 274
 Knuckle-bones, 135
 Kohl, 15, 131, 136, 137, 203
 Kug-Bau, Queen, 7, 73, 105, 129
 Kurdistan, 17
 Kushan, 185

 Ladle, 248
 Lagash, 17, 18, 59, 73, 76, 128, 129, 190, 192, 227
 Lamb, 133
 Lampre, 157, 227
 Lamps, 90, 202, 203

- Lane, W. H., 8, 9, 10, 12, 14, 23, 75, 80, 83, 97, 101, 124
 Langdon, S., 8, 23, 74, 105, 125, 142, 191, 202, 214, 225, 226, 231, 289, 291
 Lapis lazuli, 16, 18, 43, 45-48, 53-58, 62, 121, 123, 124, 132-134, 138, 168, 170-174, 181-186, 189, 192-198, 205, 272, 291
 Lashings, 39, 269
 Lathe, 282
 Layard, H., 59
 Lead, 17, 18, 50, 204
 utensils, 17, 50
 Leather and leather work, 13, 48, 137, 141, 149, 157, 162, 164, 175, 215, 268
 Libations, 232, 237, 239
 Lice, 283
 Limestone, 16, 19, 54-56, 58, 59, 61-63, 82, 87, 90, 94, 120-123, 125, 126, 134, 190, 192-194, 196, 197, 199-204, 267, 269, 272, 277-279, 281, 283-286
 bituminous, 19, 58, 62, 125, 190, 197, 267, 272, 273
 Linen, 13, 137, 152, 160, 178
 Lintels, 107
 Lion, 59, 60-63, 191, 192, 194-198, 259, 264, 278
 Lizard, 192, 195
 Loam, 233
 Loom-weights, 269
 Loop-holes, 102-104
 Louvre, museum, 39, 161
 L-Tl-Dar, 191
 Lugal-mu, 105, 122
 Lugal-sanda, 292
 Lugal-ud-Lugal, 105, 122
 Lugs, see Pottery
 of objects, 209, 210, 281
 of stone vessels, 279
 Mace-heads, 125, 126, 158, 160, 268, 270
 Mackay, Mrs. D., 8
 Malachite, 15
 Mane, 212, 213
 Manganese, 232
 Marble, 281, 285
 Marshall, J., 185
 Marshes, 275
 Mats and matting, 11, 13, 38, 100, 108, 130, 226, 227, 284, 285, 290
 Meat, 59
 Medallions, 16, 51, 52, 135, 137, 177, 178, 204, 209
 Meluhha, 17
 Mercury, sulphide of, 15
 Merlons, 85, 103
 Mesannipadda, 105, 129
 Mesilim, 7
 Metallurgy, 17, 49, 51, 53, 56, 157, 175, 176, 178
 Metals, see under respective heads
 Metal sheet, 38-40, 157, 158, 160, 163, 165, 176, 179
 Metal vessels, 48-50, 138, 175, 176, 279, 280
 Metope style, see Pottery
 stone vessels, 279
 Mica, 241
 Milk, 34, 124, 152, 194
 Minerals, see under respective heads
 Minoan, 257
 Model weapons, 20, 38, 157, 159, 163, 266
 Mohammarah, 59
 Mohenjo-Daro, 230-232, 235, 241, 250, 257, 258, 273, 277, 278, 284, 291
 Mongolian races, 145
 Monkey, 212, 214
 Mons Veneris, 22, 146
 Monster, 263
 Moon-god, 60
 Morgan, J. de, 18, 227
 Mortar, 11, 91, 106, 107, 109, 110, 201
 Mother-goddess, 73, 74, 142
 Mother-of-pearl, 40, 82, 92, 105, 122, 123, 126, 133, 187, 274, 281, 292
 Moulds, 107, 108, 127, 141, 145, 203, 208, 290
 Mounds at Kish, "A," 9, 10, 75-77, 79-84, 106, 110, 118, 120, 129, 131, 139, 167, 187, 190, 196, 200, 202, 203, 206, 266, 288
 "B," 82
 "C," 82
 "D," 82
 "E," 82
 "F," 82
 "G," 82
 "H," 83
 "I," 80
 "J," 80
 "P," 63, 83, 106, 110, 231
 "T," 79, 80
 "W," 76, 79, 80, 81, 118, 142, 204
 "X," 80
 "Y," 80
 "Z," 79
 Mouth, 121, 145, 171, 181, 212
 Mud, 11, 62
 Mural decoration, 92, 105, 124, 212
 Murru, 292
 Mussel, 136
 Musyan, Tépé, 157, 226-228, 230, 242, 253, 257-260, 265, 272, 283, 285, 287, 288, 291
 Nails, 47, 124, 125, 157, 167
 Nal, 230
 Naram-Sin, 17, 122, 228
 Nebuchadnezzar, 74, 79, 80, 83, 120, 138, 290
 Necklaces, 22, 54, 56, 57, 122, 123, 133, 135, 146, 182, 187, 190, 272, 283, 284
 Needles, 48, 174, 175, 268, 271
 Neo-Babylonian period, 76, 77, 80, 81, 118, 138, 142, 189, 204, 226
 Net, 285
 Net-sinkers, 269

- Newberry, P. J., 215
 Nile, 17
 Nina, goddess, 23
 Ningirsu, god, 158, 214
 Ninharsag, goddess, 73, 74
 Nintud, goddess, 23
 Nippur, 59, 73, 214
 Nose, 22, 145, 171, 207, 212
 Nose-ornaments, 52, 137, 181, 276
 Nubia, 254

 Oars, 198
 Obsidian, 228
 Ochre, 132, 209, 233, 235, 254, 255
 Octopus, 192, 194, 286
 Offering-tables, 234; see Braziers
 Oils, 240
 Ointment, 31, 33, 263
 Onyx, 134, 138, 182, 188
 Ornaments, personal, 51-57, 135, 177-189, 271-276
 Ostrich, 19, 59-61, 136, 191, 197, 214, 283, 286
 shell, 19, 214
 Ox-bones, 98
 Oxen, 46, 97, 98, 198, 202, 211
 Oxford, 14
 Oxides, 15, 50, 185, 265
 Oysters, 132, 135

 Paints, see Pigments
 Palace, 7, 73, 75-78, 82-89, 91-98, 101, 203, 227, 269, 288
 Palestine, 24, 30, 31, 250
 Palette, 209
 Palms and palm leaves, 124, 145, 147, 229, 236, 238, 248, 253, 257, 283
 Parthian, period, 80, 83, 225
 Passages, 89-91, 93, 96-98, 100, 104, 108, 114, 214
 Paste, 16, 43, 55, 134, 170, 173, 174, 193
 Patesis, 73, 76
 Patina, 38, 42, 45, 46, 157, 158, 160, 163, 172, 175, 215
 Pavements, 11, 80, 86-90, 92, 94-99, 104, 108-111, 118, 124, 125, 214, 268, 289, 290
 Pebbles, 57, 126, 127, 274
 Percival, 289
 Perfume, 263
 Persia, 17, 18, 59, 176, 185
 Persian Gulf, 15, 136, 235, 292
 period, 267
 Personal ornaments, see Ornaments
 Pestles, 201, 284
 Petrie, W. F., 169, 215, 250
 Phallic symbols, 274, 277
 Philadelphia, 10
 Philistine, period, 250
 Phillips, D. W., 261
 Pictographs, 125, 226, 227
 Pig, 213, 231, 252, 274, 275, 283
 Pigeon, 213
 Pigments and paints, 14, 15, 131, 132, 136, 208, 209, 228, 232, 236-241, 245, 246, 249, 251, 253-256, 261-264
 Pigtail, 121, 214, 284
 Pillars, see Columns
 Pillows, 13, 25, 130, 140, 146, 148, 149
 Pins, 13, 19, 44-48, 130, 133, 136, 169-174, 268, 271, 272, 290
 Pins, split, 167
 Pit, 118
 Pittings, 24, 143, 195
 Plaits, 274, 289
 Planets, 60
 Plants and shrubs, 61, 194, 197, 232
 Plaques, 39, 92, 103-105, 120-123, 198, 209, 214
 Plaster, 83-90, 96, 97, 99, 107, 112, 113, 118, 136, 141
 Platforms, 10, 91, 112, 116, 117
 Playthings, see Toys
 Ploughs, 59, 215
 Plumb-bobs, 203, 209, 269
 Plumes, 194, 195
 Pole, 60
 Pontus, 17
 Porphyry, 134, 182, 188, 279
 Portico, 9, 86, 97, 99, 100
 Pottery, baking of, 21, 25, 26, 28, 30, 32, 90, 97, 126, 140, 150-152, 155, 240
 bases: beaded, 231; cup, 30, 31, 33, 142, 143, 149, 231, 251; edged, 247; painted, 230, 250; pared, 230, 239, 244; ring, 24, 28, 29, 32, 114, 141, 148, 153, 154, 156, 230, 239, 241, 244, 246, 251
 clays, 21, 22, 25, 27, 28, 30, 31, 32, 36, 90, 97, 140, 141, 152, 154, 231-234, 238, 243, 244, 246-248, 250, 251, 262-264
 construction, 21, 22, 24, 25, 28-30, 141, 144, 147, 148, 229, 230, 238, 239, 245, 262
 contents, 29, 31-33, 36, 144, 237, 240
 covers, 155, 206, 242, 250, 251, 261
 decoration: beading, 22, 24, 26, 29, 143, 147, 148, 155, 231, 238, 239, 250; monochrome, 219, 232, 234, 235, 238, 250, 253, 254, 257, 261; notching, 24, 26, 141, 143, 147-149, 231, 239, 241, 250, 251, 255; polished, 35, 140, 141, 149, 152, 153, 155, 235, 236, 239, 241, 244, 245, 246, 254; polychrome, 227, 230, 232-238, 240, 253-255, 257, 261; relief, 21-24, 141-146, 155, 202, 203, 207, 208; scored, 35, 148, 150, 152, 153, 155, 229, 238, 240, 242-244; slips and washes, 21, 26-28, 30, 34, 35, 90, 97, 140, 141, 153, 155, 230, 233-236, 238, 239, 241-255, 258, 260, 262, 287-289
 dégraissants, 31, 140, 155, 231, 233, 238-249, 251-255

- Pottery, designs incised: animal, 147, 259;
 band, 143, 251, 263; chevron, 23, 26,
 142, 143, 145, 251; crisscross, 26, 147,
 233; general, 22-25, 27, 29, 31, 142-
 149, 207, 219, 232-234, 257; tree, 145,
 147; triangle, 23, 143, 145, 233
 designs painted: animal, 253, 255, 258-
 260, 263, 264; checker, 236, 238, 258,
 262; chevron, 258, 262, 263; eye, 263;
 hatched, 241, 251, 258, 261, 262; lad-
 der, 257, 285; lozenge, 236, 254, 256,
 258, 260, 261; metope, 236, 237, 240,
 241, 246, 258, 260, 261; star, 254, 258;
 tree and plant, 228, 232, 236, 238,
 253, 257; triangle, 236, 238, 241, 245,
 246, 253-257, 261-263
 encrusted, 136
 gray or black ware, 31, 114, 140, 141,
 148, 149, 208, 231, 234, 240, 241, 248, 251
 handles, 12, 21-23, 27, 29, 36, 83, 140,
 142, 144, 145, 150, 155, 208, 215, 228,
 231, 232, 236, 240, 242, 243, 252
 hand-made, 24, 32, 33, 35, 37, 149-151,
 154, 155, 156, 207, 229, 230, 244, 247,
 248
 lugs, 32, 151, 207, 230, 232, 240-242,
 260-263, 288
 model, 19, 24, 143, 149, 155, 240, 244,
 247, 249
 painted, 140, 142, 208, 225-230, 232,
 236-238, 239, 241, 244-246, 249, 253-
 255, 257-260, 262, 263, 265, 275, 288,
 291
 pot-marks, 231, 255
 rims, 24, 26, 28, 31, 32, 34, 35, 140, 141,
 147, 148, 150-152, 155, 238-244, 245-
 251
 spouts, 22, 29, 30, 34, 83, 123, 139, 142,
 149, 207, 230-232, 235-239, 244, 245,
 254, 255, 257, 262, 263
 stands, 141, 206, 219, 231, 250, 270
 suspension, 32, 33, 151, 155, 207, 240-
 242, 261, 262, 263
 theriomorphic, 231, 232
 types, 12, 13, 19, 21-30, 32-37, 123, 139,
 141, 146-155, 231, 232, 234, 237-251,
 253
 Powder, 62
 Prickers, 137
 Priests, 62, 226
 Procession, 284
 Pudenda, 255
 Punjab, 169
 Pyrites, 18
 Qau, 214
 Quartz, 181, 182, 188, 203
 Quartzite, 125
 Queens, 7, 105
 Querns, 96
 Quivers, 128, 166, 211
 Quoits, 206
 Raids, 10
 Ram, 210, 212-214
 Ramps, 10, 76, 101, 117
 Rattan, 243
 Rattles, 213
 Razors, 41, 130, 164, 165
 Reception rooms, 97, 101
 Recesses, 86-89, 92, 96, 104, 113, 118
 Red Sea, 17
 Reeds, 11, 13, 38, 106, 108, 130, 158, 226,
 227, 290
 Reel, 270
 Reins, 210, 211
 Repairs, masonry, 89, 92-94
 objects, 193, 200, 204
 Repoussé work, 49, 51, 178
 Reshada, Tell, 226
 Rice, T., 8, 75, 128
 Rings, see under respective heads
 Rivers, 60, 106, 110, 144, 233
 Rivets and riveting, 38, 40, 41, 44, 160-163,
 169, 175, 176, 200, 215
 Rods, 43, 158, 164, 168, 172, 195, 265
 Roebuck, 59
 Roofs, 86, 93, 95, 99, 100, 108, 111, 226, 227, 269
 Rope, 62, 98, 121, 194
 Rosette, 267
 Roundels, 195
 Royal Air Force, 79
 Royal apartments, 96, 101
 Rubbing stones, 15, 132, 137
 Rudder, 198
 Rulers, 7, 10, 17, 18, 30, 42, 73, 74, 76, 79,
 80, 82, 83, 105, 108, 113, 117, 118, 120,
 122, 128, 129, 138, 157, 161, 164, 166,
 190, 211, 214
 Rushes, 11, 13, 38, 130
 Sandstone, 15, 125, 132, 167, 204, 265, 266,
 274, 277
 Sargon the Great, 73; II, 214
 Sargonic, pre-, 8, 73, 227, 289
 Sarsec, De, 227
 Saws, 42, 55
 Sayce, A. H., 292
 Sceptre, 161
 Schist, 107, 209
 Scimitar, 161, 215
 Scorpion, 60, 61, 192, 194-198, 259
 Scraper, 265
 Scythic, 185
 Sealings, 234, 285
 Seals, cylinder, 16, 18, 19, 41, 57-63, 115,
 129, 130, 134, 135, 137, 138, 161, 181,
 190-198, 237, 254, 274, 281-285, 287-
 289, 291
 designs, 59, 190-192, 282-287, 289
 lugged, 284, 287
 manufacture, 39, 58, 59, 192, 193, 282
 materials, 58, 62, 134, 190, 192, 281, 283
 press or stamp, 193, 195, 215, 283-287
 tabulation, 61-63, 194-198, 285, 286

- Seat, of chariot, 211
 Seeds, 289
 Semite or Semitic, 169, 122, 290-292
 Serpentine, 19, 54, 57, 58, 61, 134, 190, 198, 275
 Shafts, 114, 115, 158, 211
 Shanks, 158, 166, 171, 215, 265
 Shawls, see Clothing
 Sheath (or scabbard), 38, 137, 162, 163
 Sheep, 124, 135, 195, 278
 Shell, 14, 15, 54, 132, 135, 136, 214, 273, 275, 276, 292
 inlay, 82, 97, 122, 125, 272
 objects, 14, 15, 39, 43, 52, 58, 61-63, 130-133, 135, 161, 168, 174, 181, 182, 186, 193-198, 204, 209, 215, 274, 281, 283, 286, 291, 292
 or shell-like, amulets, 183, 273, 274
 Shield, of chariots, 210, 211, 257
 Shrine, 61
 Shuruppak, 13
 Sickles, 39, 42, 83, 161, 205, 215, 266, 267
 Silt, 81
 Silver, 13, 17, 18, 38, 44, 48, 51, 52, 55, 134, 136, 177-181, 187, 188, 190, 198, 200, 204, 209
 Sinai, 17
 Sind, 230, 232, 250, 291, 292
 Skins, 41
 Skirts, see Clothing
 Skittles, 290
 Slate, 97, 120, 121, 123, 124, 200, 204, 272, 275-278
 Sling, 270
 Slingers, 94
 Sling-stones, 111, 206, 269, 270
 Snakes, 61, 192, 195, 253, 259
 Sockets, 38, 158, 159, 266
 Solders, metal, 56, 175, 176
 Spatula, 167, 265, 287
 Spear-men, 157, 164
 Spears and spear-heads, 41, 130, 158, 164, 165, 167
 Spindles and spindle-whorls, 13, 43, 133, 135, 137, 168, 254, 267, 270, 288
 Spiral grooves, 271, 272, 275
 Spirals, 125, 134, 214, 275
 Spokes, 211
 Spouts, gutters, 269, 289
 Staffs, see Sticks
 Stags, 59, 62, 191, 192, 196, 197, 264
 Stairs and stairways, 7, 9, 10, 75, 76, 84, 91-93, 100, 101, 104, 112, 117
 Stars, 60, 61, 195, 197, 254, 258, 267
 Statuary, 130, 205
 Steatite, 168, 193, 195, 267
 Stele of the Vultures, 122, 128, 130, 157, 158, 161, 164, 214, 215
 Sticks and staffs, 59, 161, 195, 198, 202, 268, 284, 286, 290
 Stone implements, 23, 75, 83, 167, 203, 205, 215, 265, 266-269, 289
 Stone vessels, 15, 19, 83, 87, 125, 134, 135, 199-201, 279, 287, 289
 working, 18, 19, 54-56, 184, 185, 193, 200, 204, 269, 272-274, 279, 281, 282, 287, 289, 292
 Stones, see under separate heads
 Stools, 194-196, 198
 Store-jars, 90, 97, 98
 Store-rooms, 86, 97, 98
 Strainers, pottery, 35, 152-154, 248
 Straw, 89, 95, 106, 289
 Strigil, 40
 Stucco, 87, 88, 91, 97, 101, 107, 203
 Studs, 162, 181
 Sun, 51, 208
 Susa, 157, 208, 215, 227-230, 241, 242, 250, 253-255, 257-260, 265, 266, 269, 272, 283-285, 287-289, 291
 Svastika, 284
 Sykes, P., 17, 59
 Syria, 16, 27, 30-32, 123, 135, 142, 159, 178, 186, 214
 Table, 62, 198
 Tablets, clay, 91, 202, 225, 226, 227, 234, 254, 275, 281, 288, 291
 stone, 125, 202, 227
 Tangs, 38-41, 134, 162-164
 Teeth, 14, 42
 Tello, 164
 Tells, 10, 47, 79, 80, 82, 117, 124, 129, 144, 156, 176, 207, 226
 Temples, 47, 73, 110, 144, 146, 226, 241
 Temple-tower, see Ziggurat
 Tent-cloth, 268
 Thorns, 169
 Thread, 270, 289
 Throwing-stick, 161
 Tigris, 17
 Toilet-articles, 44-48, 131, 138, 167, 168, 265, 271
 Toilet-cases, 13, 41, 44, 114, 130, 137, 168, 169
 Tombs, 267
 Tools and Implements, 38-42, 157-167, 204, 265-268
 Tooth-pick, 169
 Topography of Kish, 79-83
 Tower, 73, 76, 84, 92-94
 Toys, 10, 20, 135, 209, 212, 213, 277, 278
 Trees, 59, 61-63, 145, 192, 194-195, 197, 198, 208, 257, 259, 283, 285, 286
 Tubes, 195, 196
 Tufa, 199, 200, 201, 268
 Turban, 212
 Turkestan, 259
 Turquoise, 15
 Turtles, 207, 283
 Tweezers, 137, 169
 Unguents, 240
 Ur, 73, 105, 227, 229, 265, 267, 277, 278

- Ur-Ilbaba, 73
 Ur-Nammu, 275
 Ur-Nina, 76

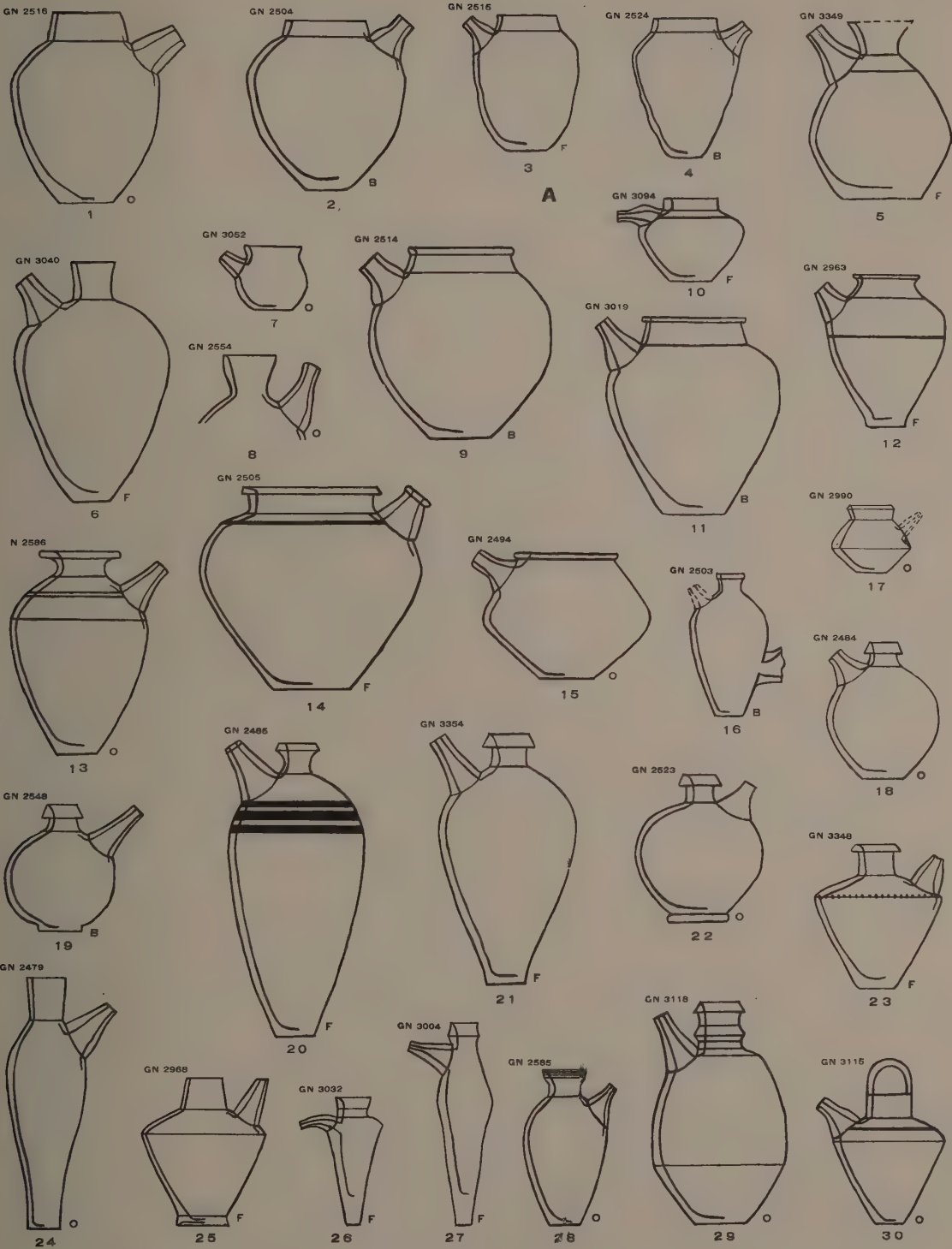
 Vats, 90, 97, 98
 Veins, 40
 Vestibule, 92
 Vultures, 122, 128, 130

 Wainscot, 87, 88, 110
 Wands, 40, 123, 160, 161, 195, 214, 215, 287, 288
 Warrior, 257
 Watelin, L., 227
 Water-goddess, 23
 Wax, 14
 Weapons, 38-42, 137, 157-167, 265, 268
 Weaver and weaving, 137, 267, 288
 Weights, 87, 126, 127, 255
 Weld, H., 8, 74, 76, 105, 122
 Wheat, 289

 Wheel, of vehicle, 209-212, 270
 potter's, 21, 25, 26, 28-30, 33-35, 139, 141, 148, 151-153, 155, 229, 230, 235, 240, 244, 245, 247, 249, 250, 289
 Whorls, 43, 133, 168, 267
 Wig, 212, 284
 Wire, 41, 42, 164, 167, 169, 172, 173, 177, 180-182, 188, 190, 200, 209
 Wood, 38-40, 45, 91, 96, 100, 107, 123, 137, 158, 159, 161, 162, 165, 168, 211, 215, 226, 248
 Wool, 137
 Woolley, C. L., 105, 124, 129, 156, 176, 227, 229, 278, 288
 Writing, 202, 227, 255, 275, 281, 288, 291

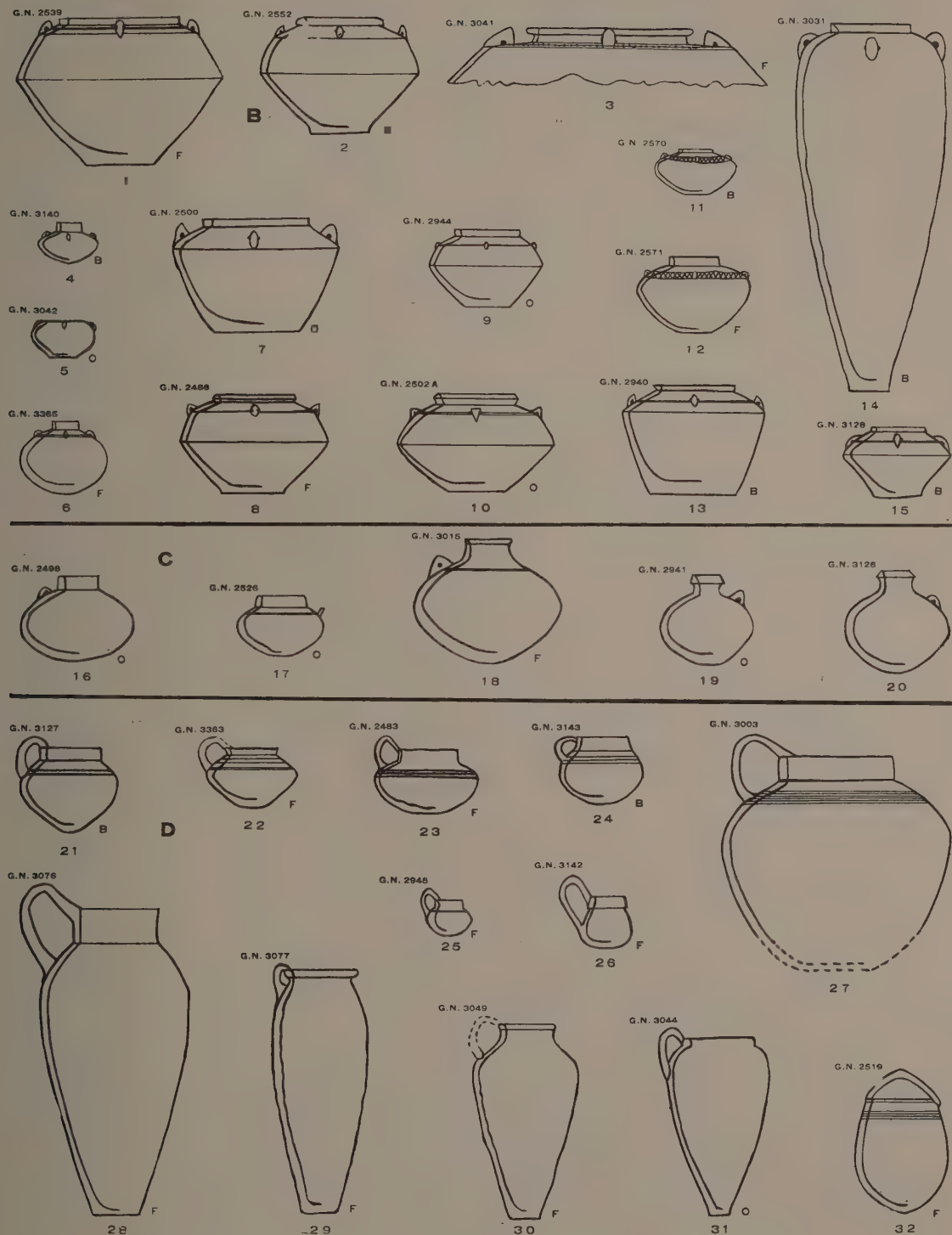
 Yarn, 137

 Zagros Range, 17
 Ziggurat, 60, 62, 79, 80, 82, 117, 194, 207, 226, 292



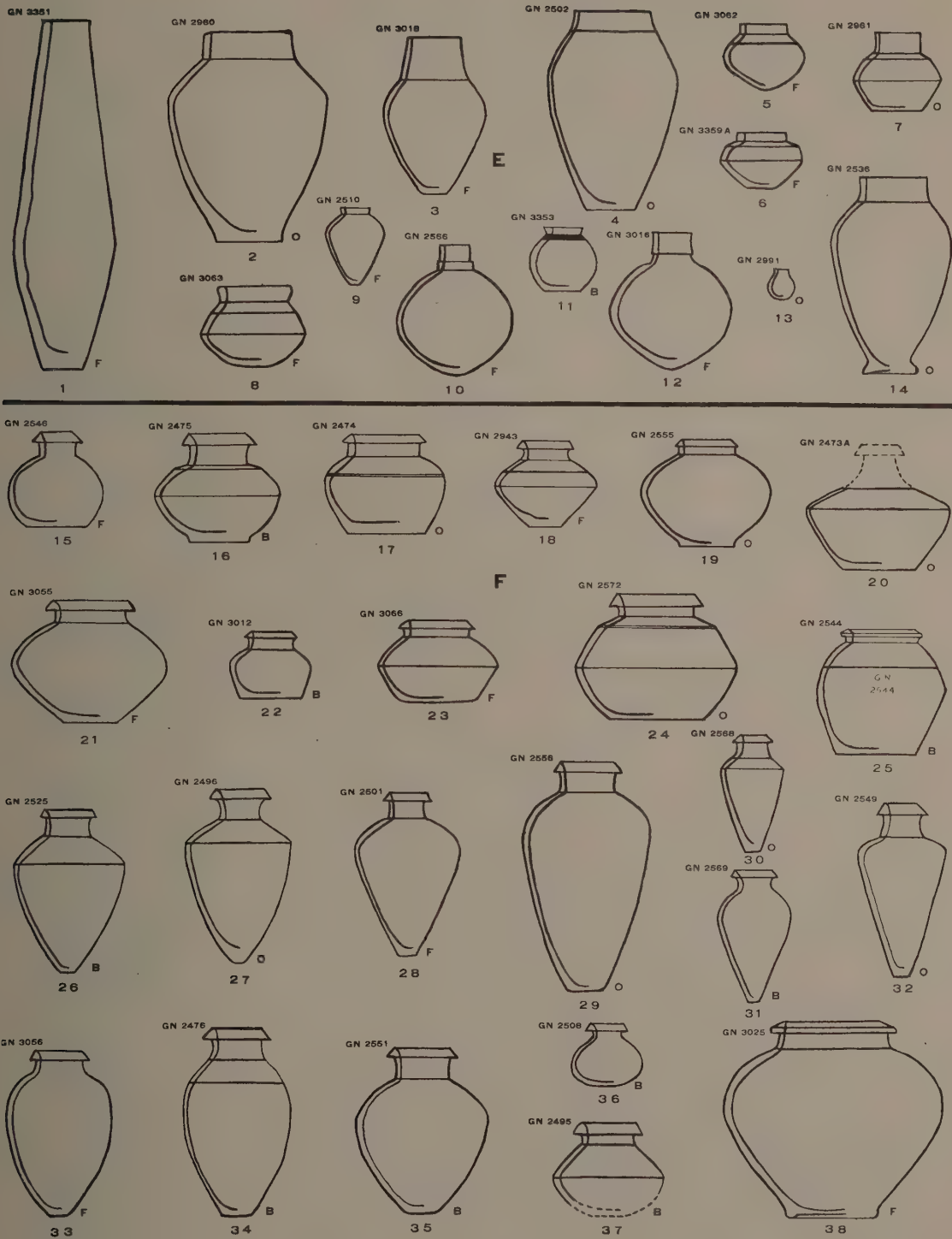
SPOUTED POTTERY, TYPE A
Scale 1:6

B SIGNIFIES BAGHDAD
F SIGNIFIES FIELD
O SIGNIFIES OXFORD



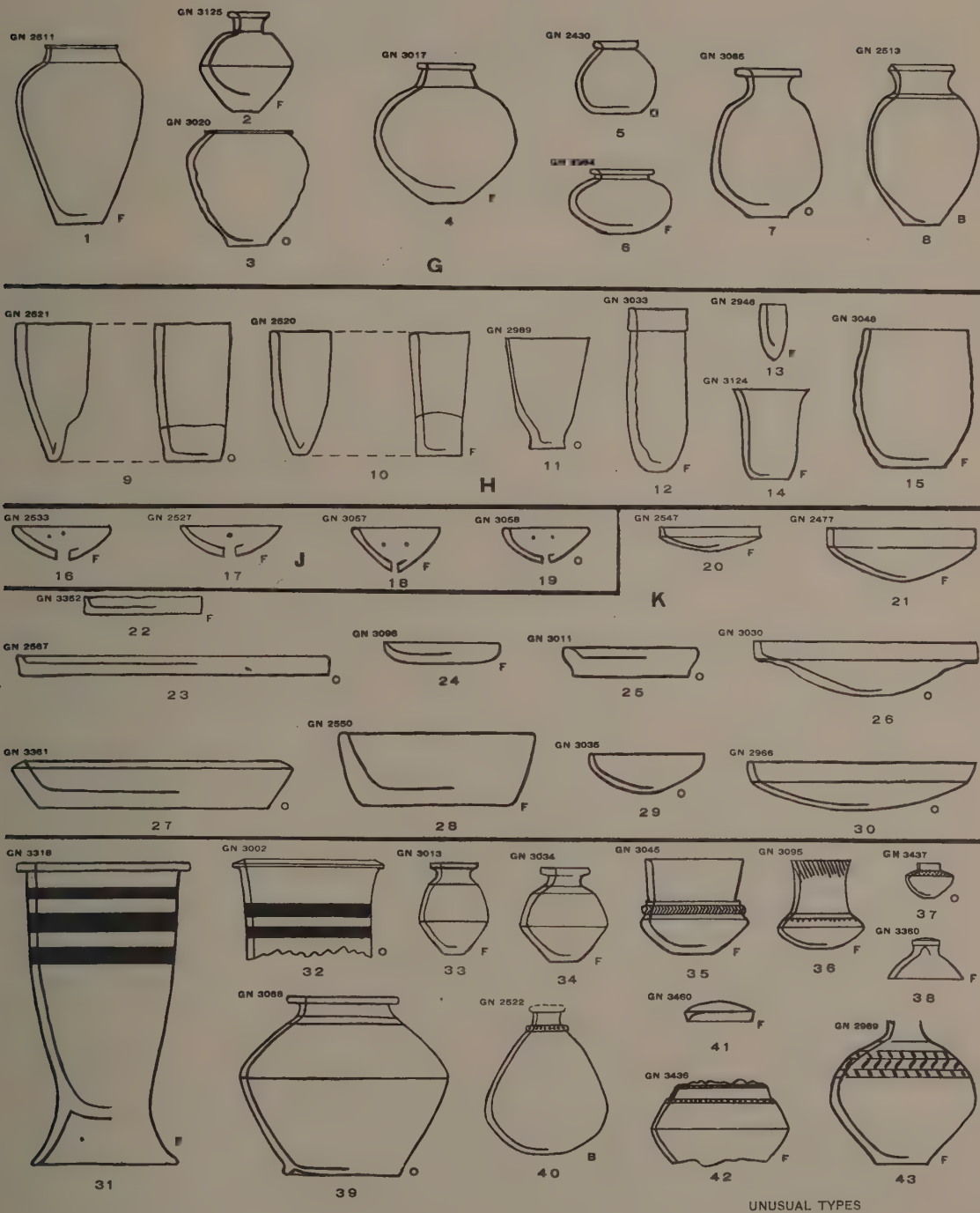
LUGGED AND STRAP-HANDLED POTTERY, TYPES B, C, AND D

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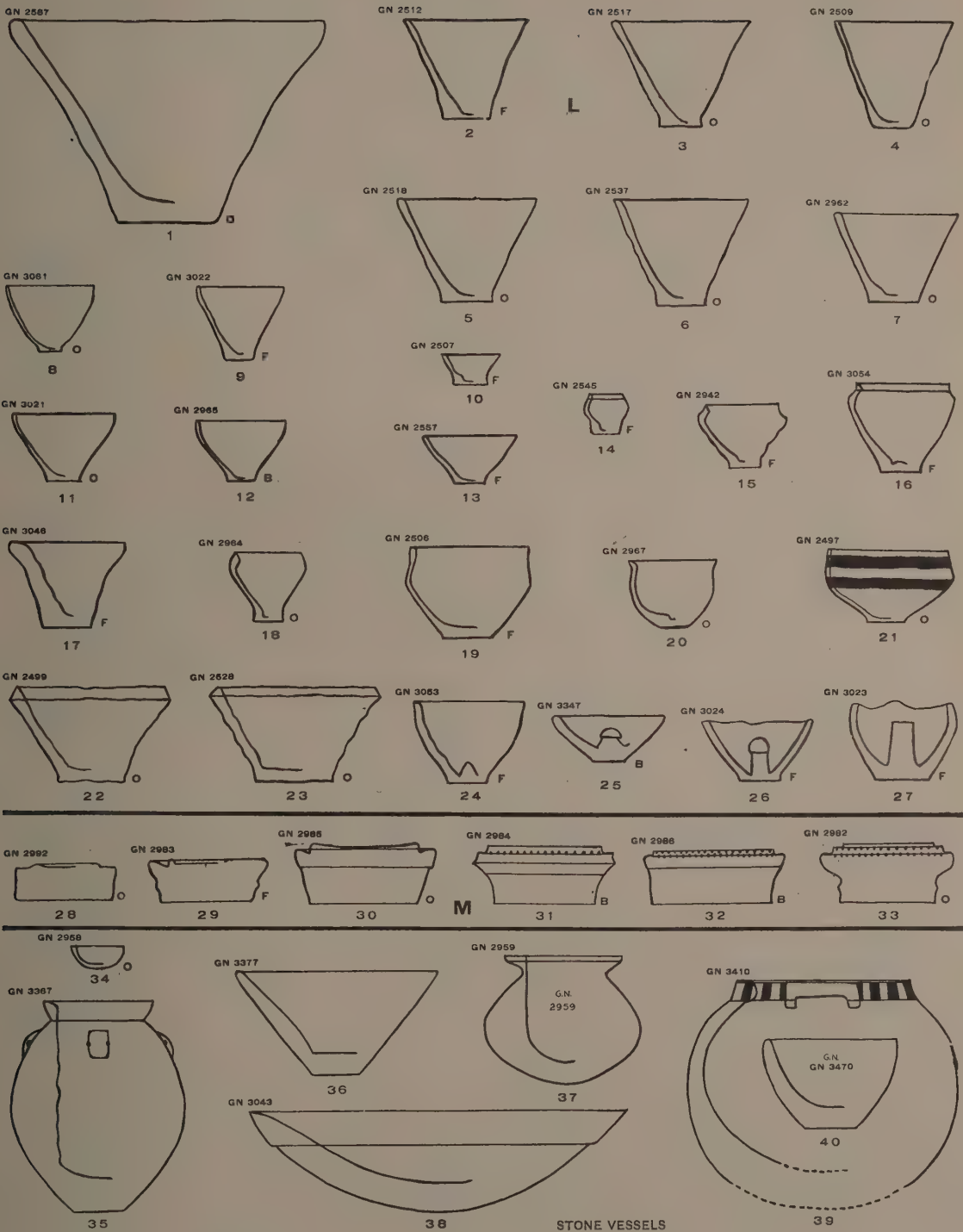


POTTERY WITH PLAIN AND OVERHANGING RIMS, TYPES E AND F

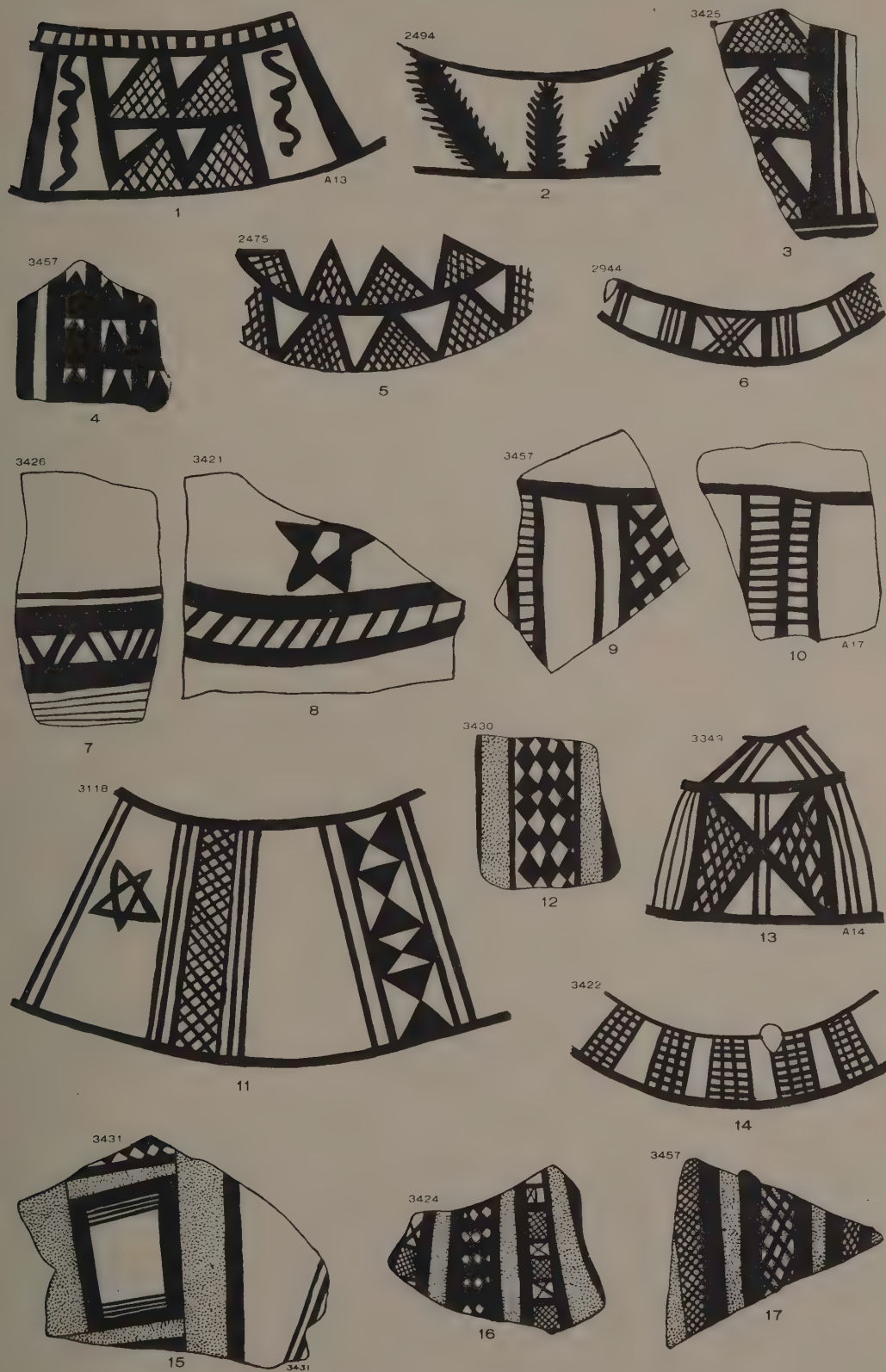
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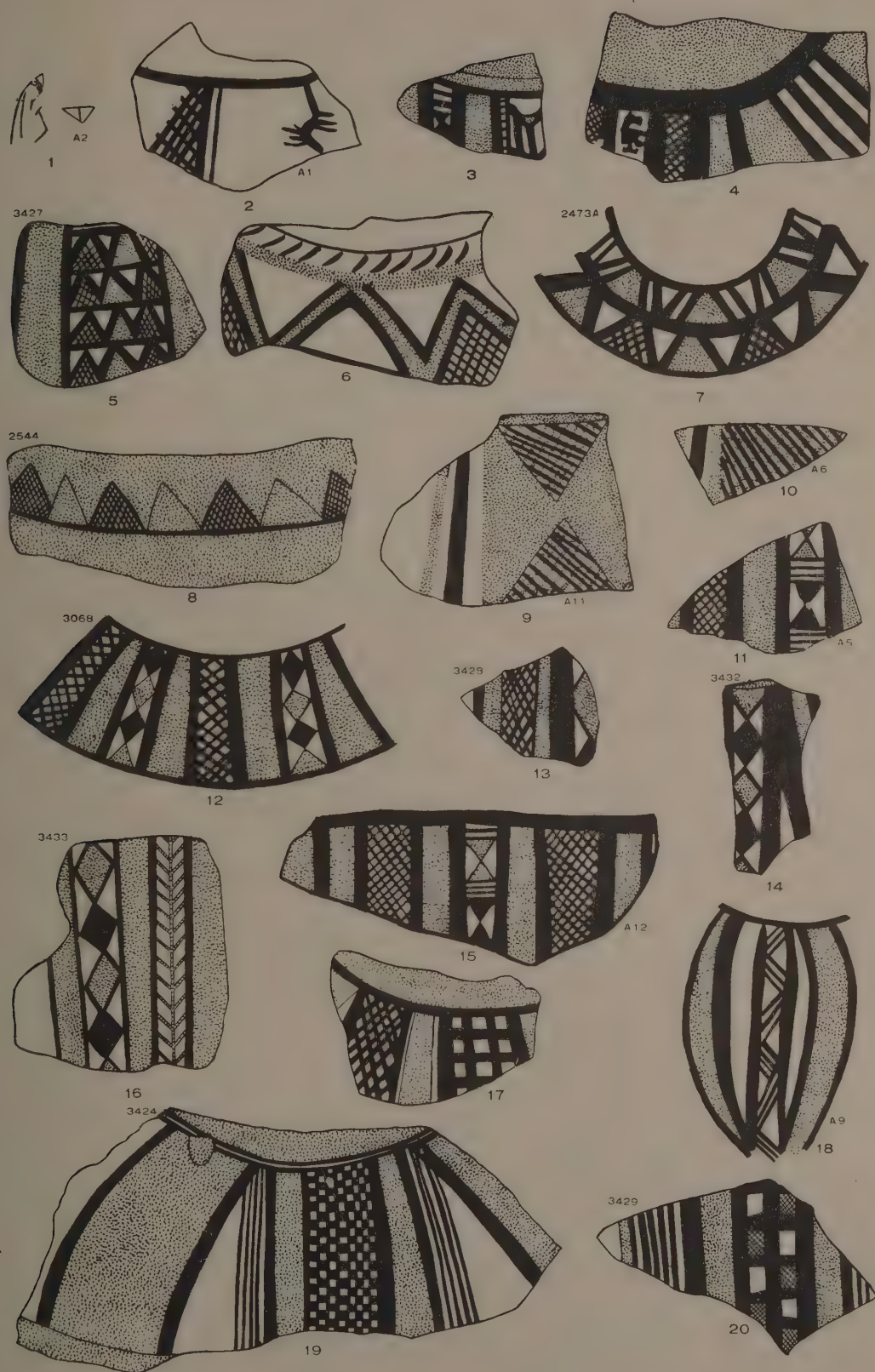
BEADED RIMS, BEAKERS, STRAINERS, DISHES, PANS, AND UNUSUAL TYPES
TYPES G, H, J, AND K
Scale 1:6



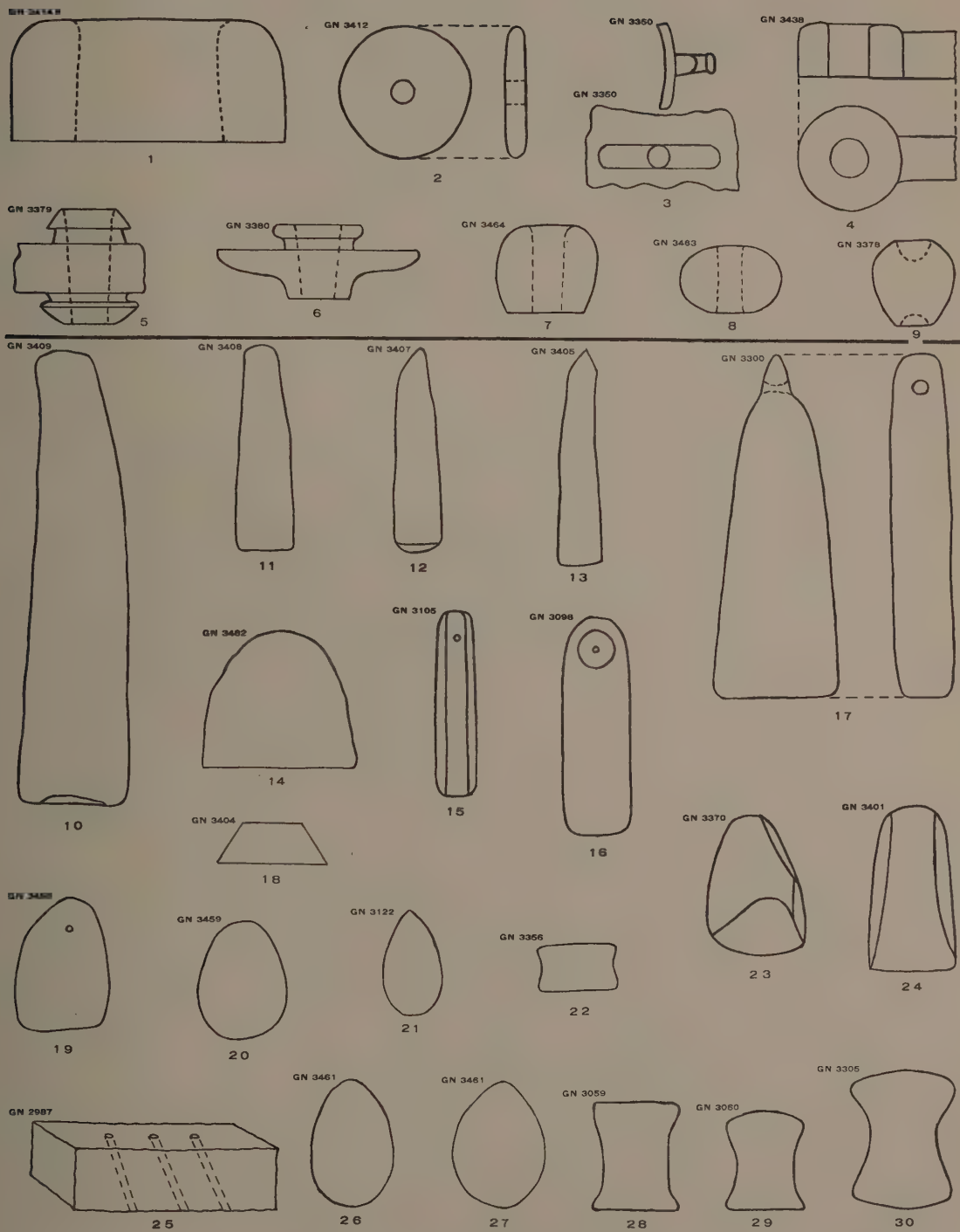
POTTERY CUPS, JAR STANDS, AND STONE VESSELS, TYPES L AND M
SCALE: Pottery 1:6; Stone Vessels 1:4



MONOCHROME AND POLYCHROME DESIGNS ON POTTERY
Scale 1:2

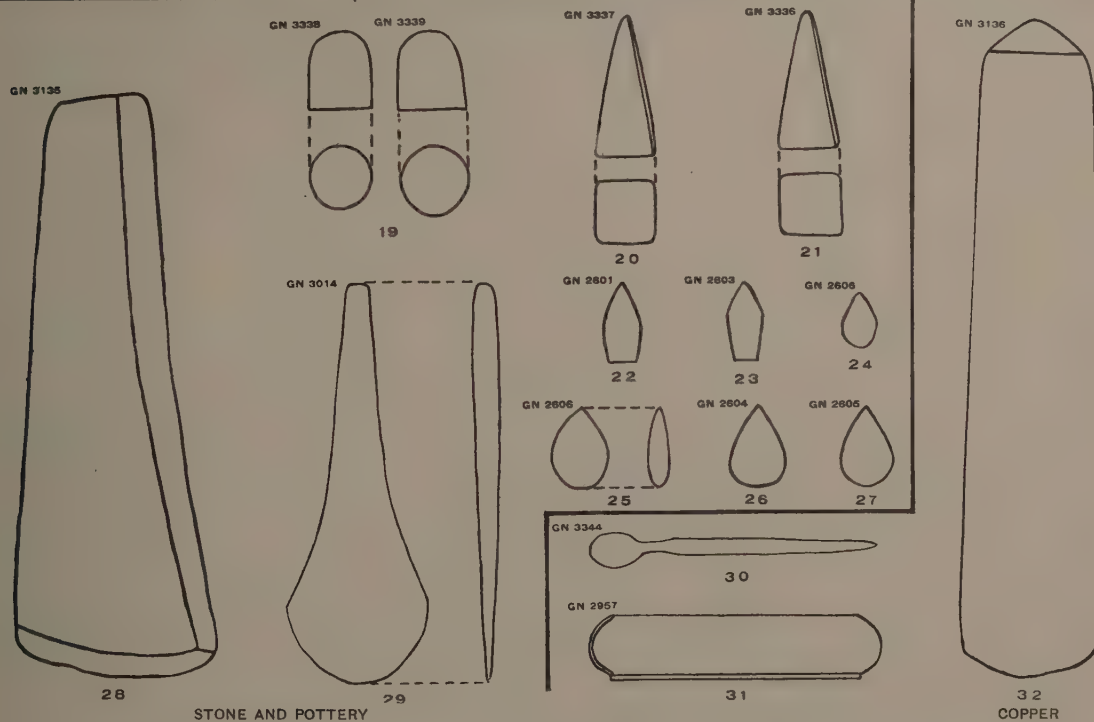
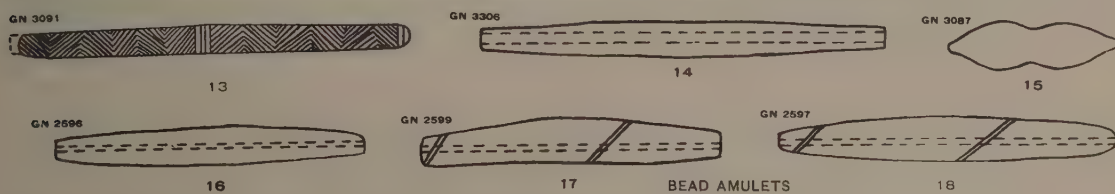
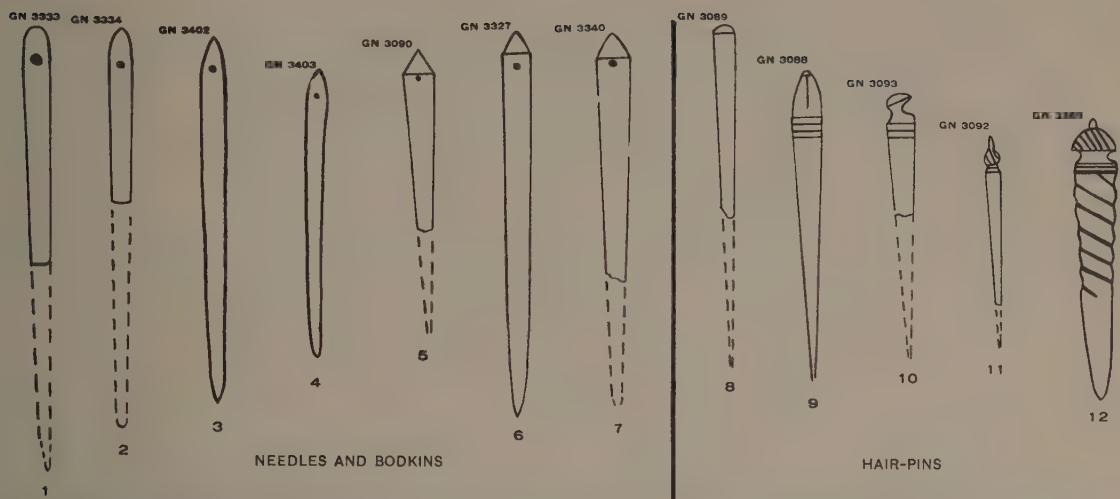


POLYCHROME DESIGNS ON POTTERY
Scale 1:2



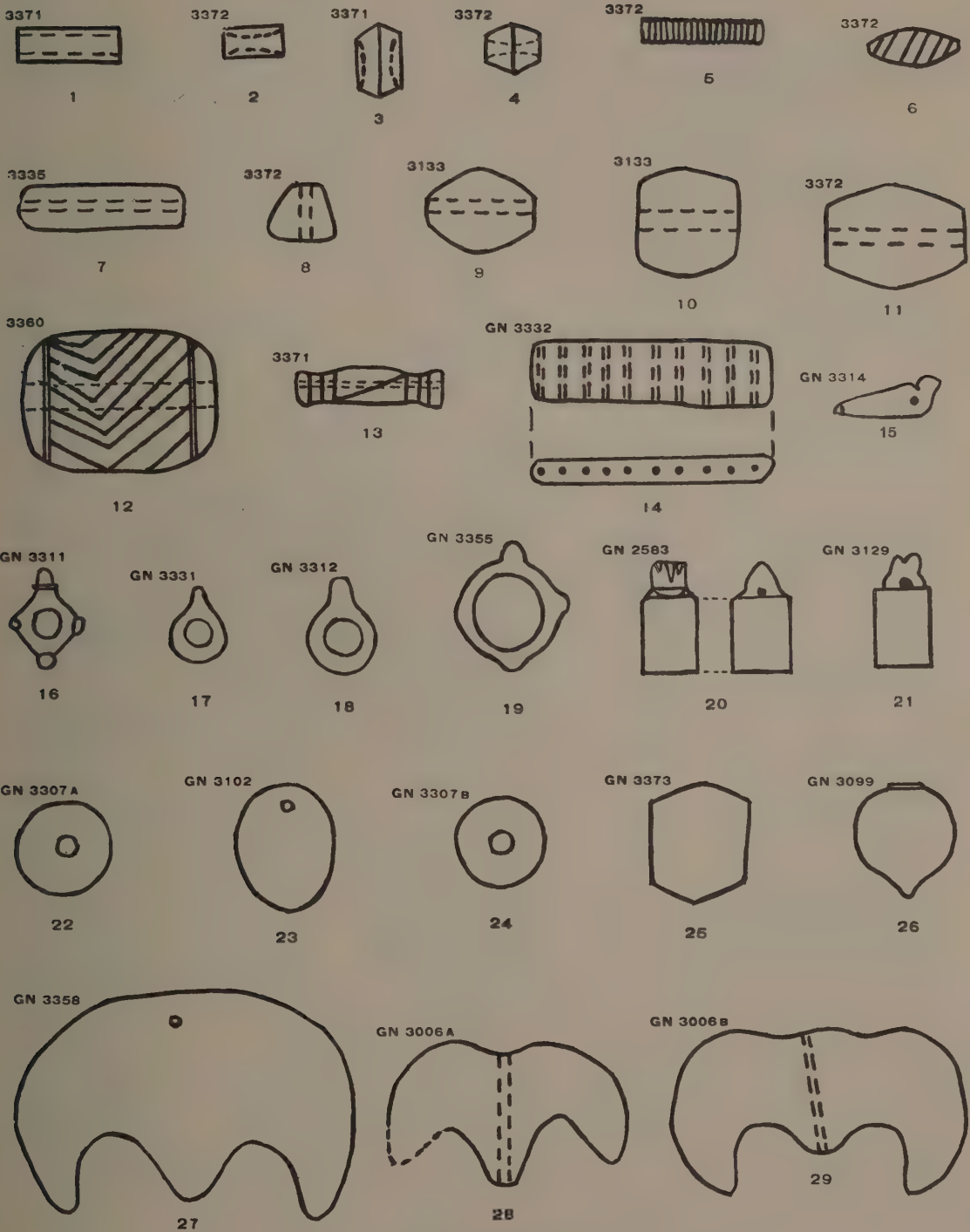
TOOLS AND IMPLEMENTS

SCALE: Figs. 3, 4, 7, 8=1:6; 5, 6, 9=1:4; 14=1:8; Remaining Figs. 1:2



NEEDLES AND BODKINS, HAIR-PINS, BEAD AMULETS, STONE, POTTERY AND METAL OBJECTS

Scale 1:2



BEADS AND AMULETS
Scale 1:1

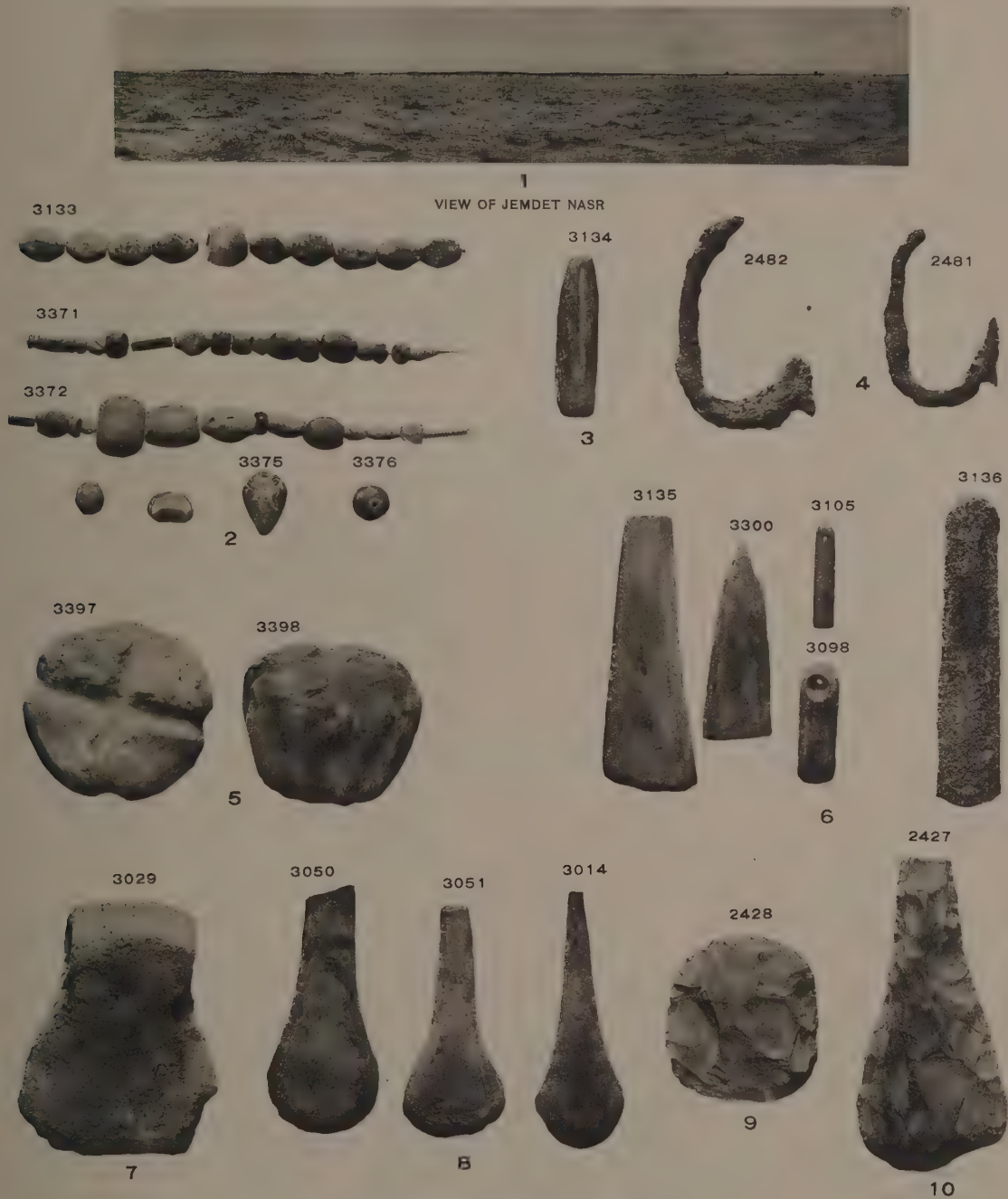


CYLINDER AND STAMP SEALS



FIG. 9. For 3381 read 3081

POTTERY ANIMALS, AMULETS, SPINDLE-WHORLS



OBJECTS OF STONE, POTTERY, AND METAL



POTTERY



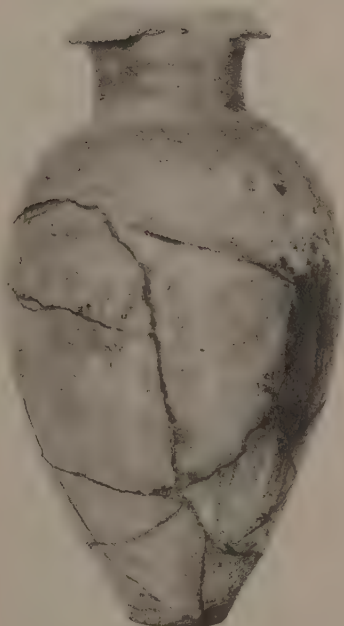
1



2



3

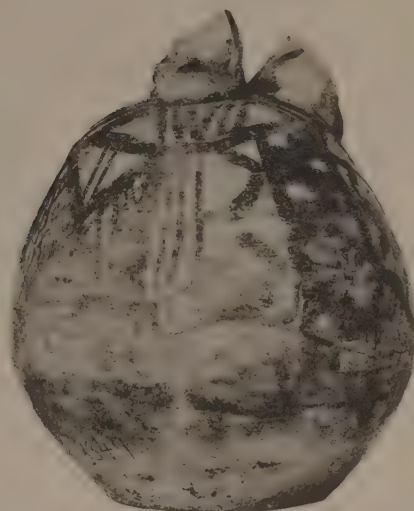


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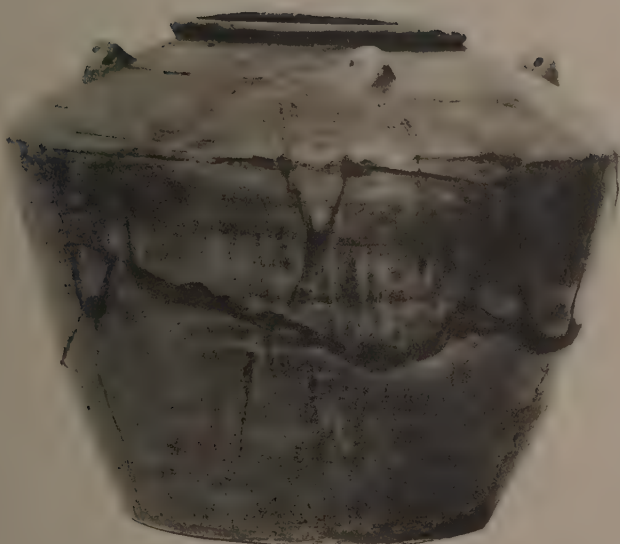
RESTORED PAINTED POTTERY



1



2



3

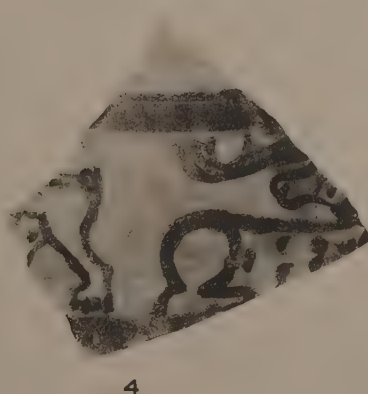
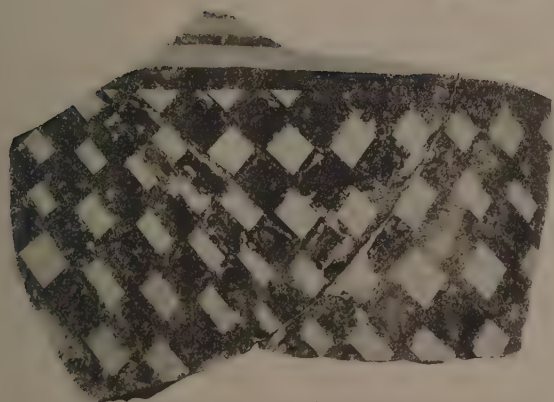


4

RESTORED PAINTED POTTERY



RESTORED PAINTED POTTERY



FRAGMENTS OF PAINTED POTTERY

